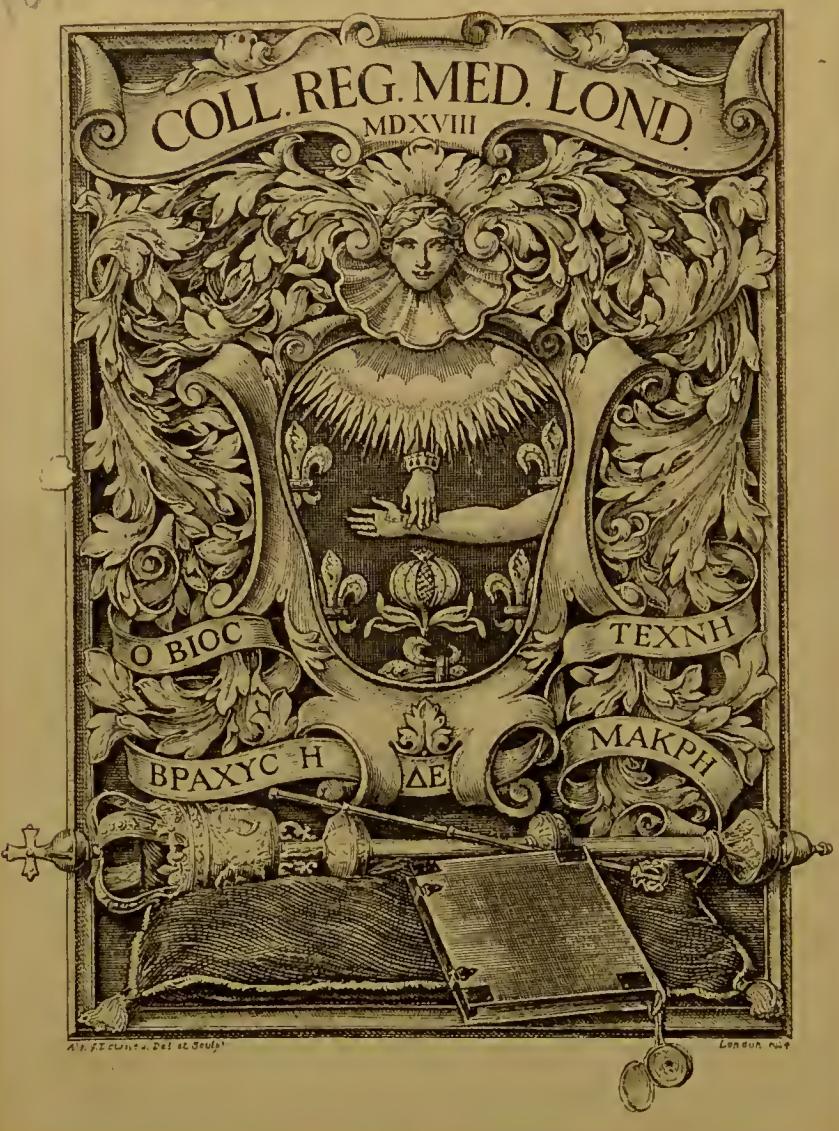




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To
Dr. Baillie
with the respects
of the Author.



GENERAL OBSERVATIONS
ON THE
PHILOSOPHY OF MEDICINE;
WITH SOME
ANTICIPATIONS OF ITS FUTURE STATE,
ARISING OUT OF
A COMPARISON OF ITS PROGRESS
WITH THAT OF THE
SCIENCES IN GENERAL.

JOSEPH WILLIAM GULLIFER, Esq.

“ Omnes etenim scientiae commune quodam vinculo inter se continentur.”
CICERO.

EDINBURGH:

Printed by James Ballantyne and Co, for the Author.

1809.

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EDINBURGH, Sept. 4, 1809.

DEAR SIR,

Of the very defective state in which the following pages are made to appear, no one can be more truly sensible than I am myself.

Upon the several subjects which are incorporated with the general disquisition, I have, it will be perceived, delivered my sentiments with freedom; and, however imperfectly the argument has been illustrated in the sequel, still I earnestly hope that this short result of my inquiry into those causes which have more immediately retarded the advancement of medical science, will be received, by you, as an earnest of that high and respectful regard in which you must ever be held by,

DEAR SIR,

Your very obedient servant,

JOSEPH W^M GULLIFER.

To DUGALD STEWART, Esq. Professor
of Moral Philosophy in the Univer- }
sity of Edinburgh, &c. &c.

A SUMMARY,

EXHIBITING

THE HEADS OF THE ARGUMENTS CONTAINED IN THE
VARIOUS SECTIONS.

§ 1. The subject proposed.—§ 2. No first principles in medicine ;—embarrassment which the student feels from having no DATA to conduct his inquiries.—§ 3. The want of a scientific language in medicine ;—vascillating state of medical science.—§ 4. Man, the noblest subject of inquiry ;—necessity of this inquiry being conducted within its determinate limits.—§ 5. The importance of physicians not falling into the errors of established opinions.—§ 6. Fashion in medicine, influence of.—From the system of medical education being improperly conducted, physicians have often as much to UNLEARN as they have to ACQUIRE.—§ 7. Medical empirics not to be restrained by legislative

authority.—Credulity and scepticism, influence of; their natural tendency to approximate and to harmonize.—§ 8. Free spirit of public inquiry, its advantages; the abuses to which it is liable from wilful misrepresentation.—§ 9. Hypotheses in medicine, their utility considered.—Philosophical curiosity, advantages of; concluded with remarking, that “there is no knowledge (strictly so called) which is not valuable.”—§ 10. Fatality in human affairs, idea of; refuted by a reference to those general laws by which the mechanical system of Nature, the physical constitution of man, and all human affairs, are governed: Further illustration of this subject is offered, by a reference to that species of negative and of positive corruption to which states are rendered obnoxious.—These remarks are intended to reflect a moral for some of those indolent physicians who are so apt to exclaim, upon the first appearance of danger, that “THE HOUR OF THEIR PATIENT IS COME.”—This section is concluded by observing, that the same erroneous views which the ancients took of physical science in general, are still predominant amongst many of the moderns in their researches after medicine, in consequence of there being few or no models for sound investigation into the principles of the science.—§ 11. Dr Cullen’s name, allusion to; but before proceeding to the consideration of his writings, a brief transcript is offered of the gradual advancement of the human mind in the study of the sciences up to the present period, together with some hints regarding man’s progres-

sive history, drawn from those general principles of political philosophy, which are ultimately drawn from the science of reason: the whole concluded with a general scope of Dr Cullen's writings, and a few remarks upon some of the causes which have retarded the advancement of medical science.—§ 12. In what manner the errors of past generations become salutary to those which are present; with some remarks upon the method of conducting medical investigations.—§ 13. Exhibits a sketch of the characters of men in general, and of medical men in particular; concluded with some additional observations upon man's natural history.—§ 14. Proposes, in the form of a query, whether the method of induction, and the legitimate rules of philosophising, might not be aptly and successfully applied to the science of medicine. This subject illustrated by the example of the present state of the physical and metaphysical sciences.—§ 15. Exhibits a more particular view of the state of medicine at the present time, with some hopes as to its future improvement, founded upon the reasonings contained in the context.—Dr Hamilton's work, remark upon;—the whole concluded with some further anticipations of the future state of the science, and some reflections, bearing a reference to the march of the human mind, from simple truths to the more comprehensive establishment of scientific principles.

GENERAL OBSERVATIONS

ON THE

PHILOSOPHY OF MEDICINE,

&c. &c.

Section First.

WHEN the Statesman sits down to study the profound views of the science of legislation, and the Physician to investigate the various results arising from the complicated structure of the human body, the object which both propose to themselves, at the commencement of their labours, bears a manifest relation to the same end, viz. the bettering the condition of the human species. The errors of the practical Statesman, however, and the policy by which he is governed, are

A

soon* discovered, and soon pointed out, by the discerning eye of an enlightened public; but the Physician is able to veil his errors, and conceal the imperfections of his art, under the specious appearances of knowledge. This concealment of ignorance, on the part of the Physician, could not long pass unregarded, if there were any convincing test whereby to judge either of the depth or of the soundness of those principles whereupon he proceeds.

Section Second.

THAT we are very far from the knowledge of first principles in medicine, has been often allowed; and that no department of science can be expected to go on in any state of progressive improvement, until some data, some elements, are furnished to conduct the inquirer, is likewise a fact that cannot be denied. It is from the want of some materials

* See note A.

of this kind, that the medical student finds himself so much at a loss ;—he studies, and he may still continue to do so ; collecting ideas *ad infinitum*, without reaping any real or solid advantage ;—he cannot even indulge the fond hope, or the alluring prospect, of benefiting posterity by his labours ;—he discovers, amidst the immense mass of materials presented to his view, such a multiplicity of heterogeneous opinions, as bewilder the attention, and distract the memory, and which he can refer to no general head whatever ;—he finds himself entangled in the mazes of an unintelligible phraseology, that claims no title to use, much less to distinction, but that which the venerable sanction of time always secures to monuments of antiquity.

Section Third.

VARIOUS as the divisions of mental inquiry are found to be, and difficult as it is to pursue them with precision, from the vagueness of language itself, yet in no circle of knowledge is this inconvenience more sensibly felt than

in medicine. How various are the terms which Physicians daily employ, without annexing any correct or distinct idea to them ? I feel persuaded, from the prodigious improvement that chemistry has lately undergone, partly owing to the philosophical nomenclature introduced by the French, and partly to the scientific arrangement observed in classing the different parts of its system, that, if a path somewhat similar to this, that is, a plan conducted upon principles nearly allied to it, were once opened, and steadily pursued, we should then gain a very important *desideratum* to guide the studies of medical men. When speaking upon the sources of misunderstanding and fallacy arising from the ambiguity of language, it ought not to be forgotten, as the Abbé de Condillac has well remarked, that we think only through the medium of words ; and that the first step towards the attainment of a philosophical system, is the acquirement of an accurate language for the ideas we express. It is not, however, the language of medicine itself that is so exceptionable—the doctrinal parts of it are no less so. Whilst the doctrines of Sym-

pathy, of Spasm, of Irritability, follow each other with such a rapid succession at one time, and are found to approach and to recede from each other like the oscillations of a pendulum at another, what prospective advantages can the science of medicine be expected to hold out? That which is so fluctuating, so eccentric in its orbit, so totally void of any solid foundation for its support, which is made to appear as the standard of perfection to-day, and becomes obsolete on the morrow, may please for a while the speculative theoretician, but can never prove useful to the patient inquirer after the sublime operations of nature.

Section Fourth.

WHEN man is thus made to become the subject of our researches, and a nobler one it is impossible we can propose to ourselves, it is most essentially necessary that we think justly lest we begin to act indiscreetly. Let, therefore, the goal from which we start,

be a determination to confine the efforts of our limited understandings within the narrow bounds that nature has assigned to us. Let us not sport in the excursive regions of fancy, but keep within those clear latitudes that rigid observation points out. We may thus be able to distinguish with accuracy between those just rules for practical conduct, which guide the actions of enlightened men, and those feeble, yet dazzling expedients of conjectural hypothesis, which the instability of empyricism is sure to engender.

Section Fifth.

IT is of the last importance to the well-being of society, and to the honour of every person engaged in the practice of medicine, that the Physician should not fall into the errors of established opinions. That Physician commits a breach of public duty, who adopts the system of any favourite theorist, however high his authority, however splendid his reputation, without first of all sub-

mitting that system, in all its parts, to the severe test of his own examination. In the performance of this task he will not imitate the unprincipled captiousness of the sophists, and quarrel about the trifling nature of a straw : great souls hunt only after that game really worthy to be caught. Reason is sometimes lulled to sleep by the awful fasces of the magistrate ; and men of grovelling pursuits are, not unfrequently, with their *tongues*, induced to consent to that which their *hearts* inwardly belie. If the Spartan law-giver was at pains to inculcate, that such a servile habit of mind formed the principal source of corruption amongst his people, with how much greater force must his precept have applied to the person of Physicians, whose province it was to minister to that people's health, to that people's enjoyment ! As no one can possibly understand syntax, without first of all learning the elements of grammar, and the general structure of language, so, if we expect to practise medicine with success, we must carefully probe its doctrines to the bottom, and not blindly employ the

theoretical maxims of others, as the sailor uses the tables of his logarithms in traversing the depths of the ocean.

Section Sixth.

FASHION, which exerts so imperious a sway over the flowing tide of human sentiments, extends her baneful influence likewise over medicine, and powerfully modifies the practice of medical men. Those whose education has been conducted on erroneous grounds, often find, when they come to tread the thorny paths of public life, that they have as much to *unlearn* as they have to *acquire*; and amongst no class of individuals does this misfortune more frequently occur, or more powerfully operate, than amongst Physicians. If men, and if teachers, however, would but profit by the plain dictates of an unbiassed and well-directed understanding, this inconvenience could never entail itself. Some there are, perhaps, who will be slow in confessing the necessity of the understanding

undergoing this thorough repair, and still slower in avowing, that, in medicine, silence is as often a cloak for ignorance as it is the charming companion of modesty.—When once any particular set of opinions, or particular method of practice (however deprived these may be of the just attributes of science), have amongst medical men acquired an ascendancy, it is extremely difficult to overturn the empire they obtain over reason ; no time should, therefore, be lost in abandoning habits of mind so unscientific, which such erroneous notions must always engender. Prepossessions in favour of such prejudices cannot be too soon eradicated ; for, if once suffered to go on uninterruptedly, they do in a manner so entwine themselves into the very principles of our nature, as to become an integral part of ourselves, and to require the most painful efforts of a vigorous mind to check their career. The extreme reluctance with which the chemists of the last century gave up their favourite hypothesis of phlogiston, as introduced by their venerable master *Stahl*, must be fresh in the recollection of my

readers. Even when Lavoisier, whose name will ever be engraved on the bosoms of a grateful posterity, had proved, by the most decisive experiments, that the phenomena attendant on combustion, arose from the union of oxygen with the burning body, some were to be found who still continued to maintain, with the most disgraceful rancour, the theory they had imbibed with so much fondness in their youth ; and when at last they were compelled to abandon it, from an irresistible conviction of its fallacy, their conduct resembled the last parting scene of maternal tenderness, which is always attended with the most poignant grief, the most heartfelt sorrow. Of the truth of this remark, the long reign of prejudice and error, which the absurd dogmas of Aristotle maintained in the schools, affords also a sufficient illustration.

Section Seventh.

FROM the free spirit of public inquiry which some of the countries of modern

Europe enjoy, and from the great alteration that has taken place in the structure of political societies since the invention of printing was known, the boundaries of science have been extended to a degree almost incredible. The lights of wisdom are no longer confined to the cabinets of princes, but the literary productions of men are soon submitted to the pervading eye of an inquisitive public. Few sophists, few magi, few pretenders to the arts of divination, have started up in modern days: these polar stars of intelligence, who once formed a principal appendage to the dynasties of ancient states;—these profound genii, who were by an admiring vulgar supposed capable of penetrating into the inmost recesses of Divinity itself, “*ad ipsa penetralia Vestæ*,” and were pointed to as the infallible index to govern the affairs of the world, have now lost their pre-eminence and power. Their race, however, is not yet extinct; their progeny still lives; they differ not in their kind, but in degree: they have only degenerated from their more illustrious progenitors, like as the breed of certain animals,

which, when transported to another clime from that in which they were created, lose the distinguishing characteristics of that species to which they belonged ; and, like as certain classes of plants, which, when transplanted into a far distant soil from that in which they were produced, do wither and go to decay. These aspiring magicians, though they have changed the name their ancestors assumed, yet lay claim to some of their attributes, and operate under the more humble appellations of quacks and of empirics. The currency which the daily prints of this country afford to the absurd promises of this set of men, we may lament, but cannot avoid. Penal statutes, deterring men from the commission of crimes, can seldom be so framed as to enlighten their understandings. Let us, therefore, not be forward to restrain their ridiculous pretensions by the hands of power : they are unworthy the stern cognizance of civil jurisprudence ; for, in proportion as useful knowledge becomes more generally diffused, and each succeeding age consequently more illumined, in an equal ratio will the number

of this sect be diminished, and they themselves guilty of medical suicide. No danger can be apprehended to medical science from this source, although, in the rude periods of civil society, when the principle of imitation so remarkably operates in assisting the untutored genius of man, and when gross superstition supplies the place of pure religion, such expedients as these men have recourse to, might have a rooted and lasting effect ; but, in times of such comparative knowledge as *we* live in, their influence on the great bulk of mankind cannot be extensive. If it were otherwise, or that the minds of our species were destined to grope in perpetual night, we at the present day might persuade ourselves, that to die was impossible ; that death was disarmed of its dart ; that it had no door into which it could enter ; and that Art, by seconding the benevolent intentions of Nature, had secured immortality to all generations of men on this side the grave. The range of human credulity is certainly great ; but that of universal

scepticism has been greater: of the two evils it is much better that the former should usurp the place of the latter, than that the plantations of science should be torn up by the roots. As, however, antagonist properties, by a reciprocal affinity, sometimes neutralize each other, it only remains for us to hope, that these will gradually, though not insensibly, lose their effect, so as to end in harmony and order. In no instance can that profound remark of Mr Hume, “ that all extremes have a tendency to approximate and draw towards each other,” be applied with stricter propriety than to the career which these two opposite powers, universal scepticism and implicit credulity, have been known to run.

Section Eighth.

HUMAN discoveries in the next century, though they may not, for any thing we know, go on to improve in so rapid a state of progression as they have in the last, are

yet not likely to become stationary: we* now hold in our possession the clue to guide us in our researches after truth, and we should be careful not to throw it away. Now that the art of printing is known, there is no natural limit to bound the inquiries of man: there are no extremes between which he must vacillate; he must be the artificer of his own fortune. Nature has placed within his reach such an ample provision for his constant improvement, as to secure the race against retracing their steps to former ignorance: if we only tread in her salutary paths, we shall advance with an accelerated velocity; but if we revolt against her benevolent purposes, we shall justly suffer for our acts of temerity. We have little to fear from the fetters which public authority formerly exercised. Human reason, it is to be fervently hoped, is not again doomed to suffer a long night of darkness and of barbarism, nor to be again so debased by political slavery as to

* Here the inductive method of philosophising, first explained by Lord Bacon, is particularly alluded to.

be goaded with the galling yoke of inquisitorial vengeance. Let us express our firm belief, therefore, that the understandings of men have, by bursting asunder the trammels of power over reason, opened an avenue into vast unexplored regions of science, from whence the genius of future generations may enlighten posterity. This free scope for scientific inquiry, therefore, which the bold genius of modern times has secured as a chartered right to the possessors of European soil, it becomes us at the present day to foster and to nurture. It is a valuable legacy, left by our forefathers, which we ought to learn well how to appreciate. Availing ourselves of this almost inestimable privilege, we should be extremely cautious what doctrines we propagate, what systems we publish. If we cannot guide mankind by our labours, let us at least be careful not to lead them astray. Although we are free to say what we choose, let us be mindful not to disseminate error; and, like as states that have suddenly recovered their freedom, sometimes degenerate to the most unbridled licentiousness,

so we, who are able to write what we please, should never descend to the propagation of falsehood. Transitions of this kind, though exceedingly rapid, are yet to be found in the histories of states as well as of literature. Let us cherish, with the fond hopes of a parent, the offspring of real philosophy when they make their appearance, but destroy the seeds of sophistical cant, lest they quicken and come to maturity.

Section Ninth.

THE great volume of nature is open to all, and every one may read its expanded pages ; but it is the province of the Physician, in a peculiar degree, to become its interpreter. It is for him, therefore, to disentangle truth from error, and to be particularly cautious in drawing any general conclusions of medical philosophy, as there is no department of science whatever liable to so many sources of fallacy, as that which medicine is known to present. The strange mixture of fact

and hypothesis, pervading the writings of medical authors, has done more to retard the improvement of medicine, than most men are willing to acknowledge. Minds already under the influence of prejudice are not easily convinced of the necessity of medical reform ; whilst others, who have no settled opinions of their own, and who are made the sport of every whispering gale, assume in a day all the colours of the rainbow, all the changes of the chameleon : with both these sorts of individuals it is impossible to reason with any chance of success ; indeed, if the very goddess Suida were enthroned upon my pen, I might even then, perhaps, fail in the attempt to disperse the clouds of prejudice. There is a medical bigotry, no less than a religious and a political one, and the silvery head of snowy age frequently rivets its chains. “*Apex autem senectutis est auctoritas,*” says Cicero ; but often have I thought of this wise maxim of Lord Bacon, “*Rectè enim veritas temporis filia dicitur, non auctoratis.*” If we hesitate in declaring, that this mixture of fact and hypothesis has so materially

injured the science of medicine, let us not ransack the volumes of antiquity, in order to confirm the remark ; let us only search into the works of three of the latest and most eminent amongst the moderns, of a Darwin, a Cullen, and a Brown, and we shall see just reasons for making this observation. That principle of the mind, known by the name of curiosity, has been exerted in medical researches, to a pitch far greater than many other departments of study have claimed. In answer to this, some will very justly urge, that we are endowed by nature with a fondness for novelty, and a propensity to change ; and that, if we quench the thirst of curiosity, by indulging in habits of indifference, the healthy fountains of knowledge will soon be dried up. I know that curiosity is the nourishing food that satisfies the hunger of the mind ; that, prompted by this, Gama doubled the stormy Cape, and penetrated into the immense continent of India : by the restless impulse of this instinct also, Columbus discovered the western world, which, after an arduous struggle, for ever memorable in the annals of man-

kind, was destined in our own times to become the blissful seat of glory, of arts, and civilization. I am not, therefore, at all unaware of the extensive injury medicine would sustain, were this principle at all to be repressed, the exertions of which cannot fail to reward its possessor with profit and advantage, but I am anxious to see its aim directed to a purpose at once solid and useful. If medical knowledge cannot be resolved into real utility, it ceases not only to be desirable, but in fact often becomes dangerous. This is, perhaps, an advice which it is much more easy to give than to follow: and any attempt to mark out the exact line of utility in medicine would be presumptuous, as the comments of opinions are not always swept away; for what in one age was only the offspring of a luxuriant imagination, has become in the next the elements of science. Notwithstanding a correct history of invention and discovery can seldom be obtained, yet the crude notions of the alchemists, concerning the transmutation of metals into gold, laid the foundation for that enlarged system of che-

mical science which the industry of modern times has heaped up. Moreover, the immortal discoveries of the circulation of the blood, and the universality of the laws of gravitation, arose but from very slender beginnings. Nay, in the very doctrines of Pythagoras, which appeared for many centuries to be only the intuitive perception of genius, we recognize the rudiments of the Newtonian philosophy. Why, it may be said, at first sight, introduce these facts? they seem to argue strongly in favour of that hypothetical mania now so fashionable: if we dig deeper, however, their drift will be found so restrained in its sphere of operation, as rather to militate against than to confirm its continuance. When we arrive at a knowledge of the laws of chemical affinity, and those influencing the actions of caloric; and when we become acquainted with the rules of grammar and arithmetic, together with a facility in their various modes of application, then the mind is enabled to grasp, at one view, a vast number of particulars, which, when disjoined and apart, would require a considerable stretch of attention to summon up at a moment:

it is, therefore, in this manner, that hypotheses in medicine, by shortening the intellectual process, and assisting the efforts of memory,* are chiefly advantageous. Do they not often enable us to anticipate a truth, and do they not shorten the geometry of solids? The answer is obvious. On this ground also, hypotheses, although they are not strictly consonant to the conclusions of reason or analogy, may yet be indulged in, provided they do not in the smallest degree influence our practical conduct. I must not here forget to remark, that, as language is an instrument of thought, and a medium of communication, and is so liable to corruption, a considerable degree of caution becomes requisite in every train of hypothetical reasoning; that ringing of changes upon a few terms, in themselves neither precise nor determinate; that habit of blending metaphysical speculations with the history of facts; that vague series of hypothetical data, and that collection of empirical reasonings (if I may so term

* See note B.

them), which consists in framing combinations from a suppositious existence of facts, cannot be too strongly condemned; it was in this way that the understandings of ancient philosophers, before the division of the sciences during the age of Alexander, became so much embarrassed and bewildered: thus it was, that men were taught to soar above Nature, instead of consenting to obey her; thus also it was, that systems were forged out of the visions of an ill-directed imagination, instead of compiled out of those sterling materials reason had discovered to exist. How much the philosophy of mind has been enlarged since hypotheses were excluded from its pages, is well known to all the least conversant in this branch of study, and how long it continued to stagnate during the licensed period of their admission, is equally notorious. It is not false hypothetical reasoning alone, modifying the practice of particular men, which is so objectionable, but it is from the principles upon which authors have so often proceeded in their speculative inquiries, that medicine has been so materially injured. Although it was by the

hypothesis of a continual motion, that Plato was able to solve that beautiful problem of the duplication of the cube, thereby opening an inexhaustible vein of intelligence, and ascending one step higher in that science, wherein the restless mind of man finds an unbounded field for its lofty soarings, and where it may proudly exercise its vast dominion over Nature, free and uncontrouled by the varying opinions of the multitude; yet Plato proceeded upon grounds not less tangible than correct: we can follow him in every step of the process, from his first setting out till his final conclusion.

If insolence during the season of prosperity is the sure characteristic of weak minds, so to despise those studies we don't understand, savours no less of inanity. If the curious, and those who cultivate the soil of discovery, reject whatever does not contain a *scintilla* of proof, their attempts deserve the praise of mankind. To examine, to combine the scattered elements of science, to discover, and to invent, form an important part in the great business of professional men. Whether that instinctive faculty, directing the labours

of the beaver in the formation of its house, or that still more remarkable one, which guides the operations of the bee in constructing its cubical cell, and which works with uniformity, is but an humbler effort of that same sublime reason which reared those precious monuments * of antiquity, to exalt the soul and dignify the character of man, is not for us at present to inquire ; but there is no knowledge (strictly so called) which is not valuable, and emulation is the torch that inflames the genius of men.

Section Tenth.

To some it may appear a refinement of theory, to say that medicine has a kind of orbit of its own, as well as the world itself, out of which it cannot travel. What medicine *can* do, and what it *cannot* do, falls not, for the wisest of purposes, to the lot of hu-

* The Parthenon, the Pantheon, the temples of Eleusis of Olympian Jupiter, *cum multis aliis*.

man intelligence to determine. We are soon wafted along the rapid stream of existence, to die and to rest with our fathers ; whether there is a fatality in human affairs, and whether the short span of human life can be prolonged by the arts of the Physician, are questions which, I believe, few men of proper understandings will stop to consider. Those, however, who wish to plunge mankind once more into the gloom of Gothic barbarity, and make the race measure back those steps by which it emerged from the first dawning of reason till it mounted to the last stage of refinement, cannot certainly employ a surer method for accomplishing their purpose, than by inculcating these blind doctrines of an indolent philosophy. The ways of Providence are not to be arraigned at the weak tribunals of men : although "*all that is, is right,*" yet we are not to interpret *that* as the will of the Almighty, resulting alone from the free agency of man ; nor are those direful calamities, involving the fall of empires, to be attributed to the operations of destiny, which might have been averted by a timely

interference from the united arms of intrepid virtue. In the revolutions of human affairs, in the moral as well as in the physical government of the universe, there is a strong re-action, operating by a gradation of concurring events, which no human scale can possibly measure ; a re-action which restores the disturbed balance of nature, and conquers the force of extremes : the compass, although turned round and round by the hand of the mariner, will, when left to itself, soon afterwards recover from the shock of the vibration, and, by its own marvellous power, faithfully point to the north. That man has his different stages of being, and that states have their rise, their acmè, and their fall, the dismal retrospect of the annals of history but too sadly evinces. What reason, however, have we to complain ? The Deity, in his wise code of universal justice, acts by general laws, and not by partial : so wonderfully does he execute his purposes in some instances, that several diseases incident to the human frame arise from laws known, *before hand*, to be as general and determinate as

those by which the universe itself is governed ; these diseases, therefore, we can anticipate ; they are most strictly ordained as a *virga in terrorem*, to check the moral debasement of man, and bridle the licentiousness of his passions. Virtue, in its most extensive signification, forms the main-spring of social order, and when this strong connecting link of civil union first becomes relaxed, from a tame, servile acquiescence in received opinions, and afterwards broken by the internal vices of a people ; when, moreover, senates, instead of being the forts of freedom, become the nurseries of venality ; when the individual is every thing, and the public nothing ; then nations must be overwhelmed by a deluging torrent of anarchy and ruin, without the special interference of Fate. There is a pining atrophy in the human body, which consumes the living frame, and soon brings it with sorrow to the grave ; and there is also sometimes a pestilential state of mind, apparent in the national character of a people, which blights the exertions of intellect, and, by sapping the foundations of go-

vernment, soon effects its destruction. It is here that all around appears to droop ; that this mental disease seems so extremely epidemic, as to infect with its pestiferous breath every part of the community ; and so truly Bœotian is the surrounding atmosphere, that not a ray of valour can penetrate its gloom, that not a glimpse of that unconquerable mind, whose resources always rise in proportion to the difficulties it has to contend with, any longer remains to rouse the declining spirit from its torpor of despair, or to make fallen man assert the noble energies of his rational being.

As every thing in nature has its direct contrary, so we come now to speak of another species of corruption (very different in its kind, but not less calamitous in its consequences), to which all national establishments are rendered obnoxious after a certain stage of advancement : I mean *that* arising from the tendency of wealth to undermine power or from a far-spreading depravity of morals in the higher orders, and a general taste for the more elegant refinements of luxury ;—

from a reverence of abuses in the legislative, judicial, and executive departments of government ;—from a disunion of public spirit, and the consequent birth of factions ;—and, lastly, from the entrenchment of power in the hands of a few great families, to the exclusion of distinguished talents and integrity. When the political constitution is made the victim of this last species of venality, it may be said to totter to its fall, although the oracular voice of public opinion, the fear of detection in the higher fortresses of office, or the dread of foreign subjugation, by inspiring a temporary, well-directed energy, may avert for a while the impending storm, and restrain the corroding vices from preying more deeply on the vitals of the state ; but, as impunity begets hardihood, so, when the measure of corruption begins to be full, when this devouring flame seizes all the several gradations of rank, and a general debasement of manners marches uninterruptedly on, then the train of destruction may be considered as laid ; by the least spark the elements of combustion will be soon lighted up,

and every part of the devoted fabric must fall under the shock of the explosion. Notwithstanding the issue of a single battle has sometimes reduced nations to the slavery of ages, yet few states have suddenly lost their independence, or their freedom, without being previously ripe for ruin and decay. The past and the present history of mankind confirm these remarks: they are founded upon a spirit of prophecy far more simple and unerring than that contained in the books of the Sybils. Although venality appears in various shapes, yet its instinct is always to destroy, as that of virtue is to preserve. If, in the hut of the Tartar, and the canoe of the savage, we find the rudiments of architecture, and if, in the quarrels of children, we perceive the principles of war and dissension, so, in the elevated grandeur of some powerful dynasties, we see the germ of their downfall, and presage the lot that awaits them. Scipio, who knew, who felt, the growing spirit of the times, and who shuddered at the alarming symptoms of national disease, might well droop his head, and observe to Polybius, who

was standing by him during the sack and destruction of Carthage, “ that he feared for his beloved Rome.”—Notwithstanding the philosophy of medicine comprehends *much*, and borrows its principles from that same human nature, which borrows from no other thing, yet we must not moralize longer upon the doctrines of fatal necessity, but attend to the more manly pursuits of liberal knowledge, which never fail to expand the mind and the heart, in proportion as we advance in their study. The foregoing observations will not, I flatter myself, be considered as at all superfluous, when it is recollectcd, that they serve as a mirror to reflect a moral for those Physicians who are ever ready to proclaim, at the first signals of alarm, “ *that the hour of their patient is come.*” Effeminate minds soon give way to despair, as whole kingdoms have been reduced to slavery when palsied merely by the blind force of *opinion* decreeing their doom ; a Physician of strong understanding, who is always himself, who can feel every inch of his ground, and is fertile in expedients, acts uniformly with an

elevated fortitude, and will not stamp, as a sacred decree of Fate, what he has seen removed by the powers of medicine assisting the efforts of nature.

What the exact *modus operandi* of medicines is, we are at a loss to explain. In religious matters, *where* reason ends, *there* faith ought always to begin ; and the application of this simple principle to the healing art, Physicians are sometimes compelled to admit. Nor is this all ; how often do cases occur wherein stubborn fact will supersede the most ingenious theory ? It is almost criminal to shut our eyes against the irresistible evidence of the senses : Pyrrho affected to disregard all the vicissitudes befalling a state of humanity, and even to doubt of the difference of life and of death : in our own times, we have witnessed the revival of an ideal philosophy not less dangerous in its application : it is, therefore, a thing of no small moment, that Physicians shall be proof against this contagious nature of scepticism. I am sorry to observe, that the same erroneous views, which the ancients took of physical science in general, still continue to

occupy a considerable place amongst the moderns, in their researches after medicine. The wish to explain the *causes* of so many of those phenomena the human body exhibits in diseases, has led physiologists into the dark, and we seek in vain for a solution of some difficulties, which are to us as inexplicable as the limits of the Deity are indefinable. Is it, allow me to ask, any impeachment of human understanding, not to be able to account for the causes of those laws, the effects of which we every instant experience? No, it is not. If we could heap up a number of truths of detail, and a body of incontrovertible facts, which bear a strict reference to medical inquiries, and then generalize these facts, so as that they might be reduced to a few known heads, we should do more to improve the state of medical science, than all the theories, about body and mind, which have at various times been given to the world. We might, perhaps, by such an humble and useful mode of proceeding, gradually approximate towards, if not actually reach, that admirable system of induction which the writings of Lord Bacon every where

present, and which has been so successfully cultivated in every branch of physical and metaphysical science. By some of my readers, I fear that I may be thought to have spoken too warmly, if not too rashly, upon this head ; but, by those who have traced the wonderful progress that has been made in systems properly founded, and steadily adhered to, I trust that I shall not be said to have reasoned unjustly.—An objection, however, may be started against the foregoing plan of medical study, against which it is extremely difficult to guard ; I mean that rash application, and that abuse of general principles in all speculative reasonings, which is so likely to elude the vigilance of many, and involve them in a long train of lasting errors. A mind, previously well trained by inductive investigation, will afford the most effectual, if not the only faithful shield to protect us against the seductive charms of false and hypothetical reasoning : it is only in this manner that the errors of all men must become apparent in the last result, and that that mound of prejudices we are continually heaping up, from the earliest period of education

to the closing scene of life, can be made to totter from its base, and be gradually levelled away.

Section Eleventh.

IN mentioning the name of so venerable a man as Dr Cullen, I feel some delicacy and some tenderness, as his writings, while they are supposed to form a beautiful model for us to follow and to imitate, are yet, in my humble opinion, too replete with that brilliant species of conjecture, and that dazzling spirit of hypothesis, which have before been alluded to, and which, if pursued, will infallibly overturn that superstructure which it ought to be the constant aim of Physicians to raise and support. The errors of the author must not be hushed by the virtues of the man, nor the defects of any established system stifled on account of its age.

We may gather up the fragments of former greatness, which the sudden convulsions of states have levelled with the dust; but if we abuse that amiable trait implanted in our bosoms, which imposes upon us a pleasing

veneration for the classical remains of antiquity, mankind must suffer the consequence. We *may* respect, without feeling adoration. Those professing an hallowed regard for ancient forms, customs, and opinions, *may* strive hard to give a permanency to the institutions of men, but what is not founded upon the imperishable basis of Truth and of Nature, will moulder and go to decay. So singularly constituted is man, and so infinitely diversified are his sources of enjoyment, that every poet knows we are often able to derive such stores of ideal comfort from the existence of error, as truth itself would not be able to afford. That something of the same kind very strongly prevails, both in medicine and in the *art** of legislation, few, I believe, will be disposed to deny. It is not easy to define the something here alluded to, as imposing on and governing the minds of the vulgar; but does it not consist in the magic of dignity, or in a series of accessory ideas, warping the judgments of nature? To expect

* The “*art*” of legislation is mentioned here in contradistinction to the science of the same.

that a nation of philosophers will ever appear would be ridiculous ; but it is neither absurd nor futile to remark, that, if we do not follow the dictates of unbiassed reason, and second those innovations which repairing Time itself introduces, we *shall* wax older without being wiser. How adoptive have been the opinions of men ! When an ambitious priesthood violated the duties of the sacerdotal function, and formed themselves into an oligarchy, to frame, as it were, laws for the human understanding, and said, “ thus far shalt thou go and no further,” with what meekness did the race submit to be led ? The times, however, are altered, for the sound dictates of reason seem to defy the attacks of delusion, and all the conspiracies against common sense. Every well-wisher to the future fortunes of mankind, must hail this gradual progress of truth with heartfelt satisfaction.—In tracing back the past history of the world, and in examining the results of the actions of men, we obtain a true picture of human society. Here an unbounded field at once opens upon us, and leads me to remark, that the province of phy-

siology is much more extensive than is generally supposed; it belongs to this science to investigate the laws of the nervous system, and those laws establishing the remarkable connection between the mind and the body. This can only be accomplished with success, by a faithful history and analysis of the faculties of the mind. It is for the physiologist also, to inquire into the effects of culture and education upon the constitution, into the power of habit, the wonderful effects of enthusiasm, and the strong force of imagination. By this severe examination of that being we call *ourselves*, and of our place in the system of nature, can a proper foundation alone be laid for the government of others: he that aspires to command, should first learn to obey; and it is in this school that this valuable lesson can best be learnt. There was a period in the condition of man, when astronomy and medicine were not subservient to the noble purpose of instructing and benefiting the race, but were confined to a few individuals, the deposits of all knowledge, who treasured them up, in order the better to subjugate the

minds of the credulous, and enslave them with the mask of authority. Thus it was that truth was sought, for the more extended propagation of error. Short-sighted politicians take the alarm when the citizen begins to dispute, as if society were not the school in which the lessons of wisdom were taught, and as if the contest of abilities did not kindle up the flame of patriotism: they forget that disputation calls forth the virtues of men, and that truth is the more beloved, the more it is canvassed. To improve the criminal code, and better the condition of a people, remove from them every source of temptation, every thing that may lead them astray from the paths of justice and of virtue; and, in order the better to give an efficiency to every government, do not consecrate the errors of its rulers, but expose and repair them, unawed by the whisperings of the fawning, or the clamorous decisions of the factious. To improve the state of every speculative science, point out not only the more prominent, but also the subordinate mistakes, into which its teachers have fallen.

How did Socrates, the beloved founder of moral philosophy, detect the despicable nature of those scholastic dialectics, which threatened to poison the fountains of all knowledge, but by submitting every one of their doctrines to the severest test of candid and temperate discussion ? How was it that he lifted up the veil, and laid bare the hidden deformities of occult sophism, but by bringing every argument home to the bosoms of men ? How else was it that Descartes first shook the foundation of that renowned literary despotism which the writings of Aristotle acquired in the schools ? How else was it that Luther, that Calvin and Wickliffe, inspired by the thunderbolts of sacred truth, emancipated human reason from the shameful tyranny of papal anathemas, but by revealing the history of that singular enthusiasm into which so many millions had suffered themselves to be plunged ? The archives of speculative science are sometimes swallowed up by the Utopian plans of chimerical schemers, as whole cities are sometimes buried by the direful volcanoes of the earth : to

resist the burning torrent of the latter, feeble man can present no barrier ; but the former can be effectually restrained in its destructive career, by an appeal to the honest understandings of men, and by an exercise of that rational scepticism, which Aristotle appears, to me, to have had in view, when he said, that “ incredulity was the foundation of all knowledge.” Something imperfect will always be found in all the institutions of men, and in all the productions of human design : the sun itself has its spots, and the atmosphere we breathe is contaminated with the particles of corruption ; but what we do discover to be defective, or inadequate to the ends for which it was intended to provide, it is at least our duty to prune, if not to lop off ; and of this the whole analogy of nature verifies the truth. The decisions of law may be at variance with the dispensations of equity ; but of this we are certain, that revolving time confirms the judgments of nature. The universality of these introductory remarks to the writings of Dr Cullen, is such as to apply to every subject we study, to every plan of improvement we me-

ditate: to some they may appear digressive, but they are placed here, in order to caution the reader against that blind admiration for all that is ancient, that servile veneration for great names, which so remarkably distinguishes many of the moderns. If there is any subject, more than another, upon which men should think for themselves, and discard prejudice, it is medicine. Although the writings of Euclid, composed 2000 years ago, afford at this juncture the best introduction to the mathematical sciences, yet this circumstance, so far from diminishing the weight of the foregoing arguments, affords an illustration of them no less striking than convincing: the Greek geometer owes the durability of his fame to the simplicity, the elegance, and the happy arrangement of his demonstrations, qualities of so rare a nature, as to secure the works of an author against the devouring elements of ages, or the frequent fluctuations of opinion. Is it not an astonishing fact in the history of the human mind, that the works of Aristotle should, at one of the

principal universities * in this kingdom, continue to form the surest road to honours and to fame? If wonder be the effect of surprise upon ignorance, what will the present generation think of the credulity of the great English philosopher, Mr Boyle, when they read in his writings, that the thigh-bone of a hanged man, calcined to whiteness, is recommended as the cure for a dysentery? This trait of Mr Boyle is the more remarkable, as he was intimately versed in the sublimer parts of the Newtonian philosophy. What will be said of Bishop Watson attributing life and sensibility to stones? † “The vegetation of stones,” says the venerable prelate, “hath been admitted by many; and some have contended, that minerals, as well as animals and vegetables, *spring from seed*; the greatest being nothing but the expansion of the parts of a minute grain of sand.”—“I do not know,” adds he, “whether it would be a very extravagant conjecture, which should suppose, that all

* Oxford.

† *Vide* the Edinburgh Encyclopædia, article ANALOGY.

matter is, or has been, organized, enlivened, and animated."—WATSON's *Chemical Essays*.

What will be thought of the learned WOLFIUS, with all the gravity of the doctors of the Sorbonne, calculating the precise dimensions of the supposed inhabitants of the different planets!! He fixes the medium height of an inhabitant of Jupiter at $13 \frac{819}{1440}$ Paris feet.

"Trees," says Mr White, "are *animated*; they have their food, their enjoyments, their grief, their health, their illness, their watching, their sleep, their emanations, their absorptions, their infancy, their youth, their puberty, their manhood, and their love. The man who does not find in animals *younger brothers*, and in plants *cousins*, more or less removed, is unacquainted with his own nature, and devoid of the *elements of morality*."—Vid. WHITE on the *Gradations of Man*, p. 6.

It is useless to multiply facts of this kind, to prove how the greatest minds are sometimes led astray, and warped by the chimeras of credulity: many others crowd upon my memory, which I must suppress, as enough

have, I flatter myself, been already introduced, to convince even the most sceptical, that science is not always polluted by the weak: indeed, if the reader will only survey the pages of our great countryman, Mr Locke, he will there find some such passages as many men at the present day would blush to publish.

It is almost impossible to consider the nature of many speculative works, daily issuing from the press, without being strongly struck with the reflection, that, notwithstanding the vast accession of force the human mind has acquired since the writings of Lord Bacon were first given to the world, yet something is still very much wanting to assist the conduct of the human understanding, by a more enlarged explanation of the rules of philosophizing, and a clearer view of the laws of demonstration. An enlightened criticism, however, is one of the last powers of the mind that unfolds itself; in many, capable of appreciating its value, it ceases throughout life to operate, being marred in its exercise by motives far different from the

good of mankind. What has grown with one's growth, and strengthened with one's strength, is extremely difficult to eradicate ; as the ivy clings with firmness to the tree that supports it, and entwines its tendrils with the copartner of its birth, so the general errors engrafted upon the institutions of men, by being handed down from age to age, are rendered sacred in the eyes of the multitude, and become consecrated by established usage. Thus it is that the salutary provisions of Nature, for the improvement of the species, are made to receive so positive a check from the hands of men : thus also it is that Nature herself becomes apparently distorted, and at one while the images of ideal greatness are refracted through the denser media of antiquated prejudice ; at another, through the paralogisms of laboured ingenuity. But, if the task above alluded to were properly performed, that is, if the laws of demonstration were more clearly defined, and the legitimate rules of philosophizing more distinctly marked out, then the errors into which all men have fallen, would in the end

become too palpable to admit either of denial or of secrecy ; they would no longer be resorted to as a source of authority ; for, when the edifice is raised, the scaffolding ceases to be necessary ; and we should then greatly accelerate that period to which the times have of themselves so strong a tendency to approach ; a period, when the avenues of truth will be more widely opened ; when states, in their foreign transactions, will be obliged to pursue a line of policy more dignified than has been hitherto practised.—The appearances of design in the universe are often smothered by the charm and the spell of political wisdom disturbing the beautiful order of nature ; but the instability of all human greatness, when not founded upon virtue, will be more universally known, felt, and acknowledged, and every attempt to bolster up those crumbling pillars, to which men once paid homage, will recoil upon the authors with the strongest temper of severity.—That delusion, into which all commercial states have fallen, of subjecting the operations of trade to political regulation and restraint,

will be seen through, and free competitions will succeed the place of exclusive monopolies ;—the dawn of a brighter day will appear, the influence of those prejudices will be diminished, which arose during the turbulent reign of feudal anarchy and the infancy of civil government; which are interwoven with the very fundamental parts of the several constitutions of European states, but with different degrees of force ; which the progress of refinement, the artificial state of society, together with a superstitious veneration for the wisdom of our ancestors, has tended to cement, and which so many laws now conspire to support :—the panoply with which the human mind has been so long encumbered, will be transpierced and removed ;—expediency must deliver its credentials, and be made acceptable in the sight of Justice, before it is resorted to as an indemnity for violence ;—the Statesman, free from the dominion of the passions, will then be obliged to interrogate Nature, and to borrow his principles of legislation from far more enlightened sources than the absurd maxims of establish-

ed usage, or the weak foundations of prescriptive right: he must seek for them where they are only to be found; I mean, in the infallible progress of human reason, in the rigid analysis and actual developement of the human faculties, powers, and sources of enjoyment; in short, in the moral constitution of man, and in an attentive examination of that perfection of which he is susceptible.—The spirit of laws, both public and municipal, will then no longer be derived from the convulsions of expiring Liberty, or the clashings of feudal aristocracy;—it must originate from that moral sense alike implanted in all, and from those finer qualities ennobling the heart and the character of man;—it must be so tempered as not to clash or interfere with our duties and our interests, but to render them inseparable; as the great safeguards of civil liberty, and the proper maintenance of constitutional authority, will best be derived, not by alienating the affections of a part in order to secure the services of the other; not by attempting to sever those indissoluble, nay those immortal ties connect-

ing together all the varieties of men, but by drawing them to a point of closer affinity, to a more immediate sphere of attraction ; by recognizing no rights but those flowing from universal justice, and by proceeding on the natural suggestions of that wise political axiom, which teaches us, that the happiness as well as the security of states is intimately connected with the progress of reason, and the general diffusion of knowledge ;—it must be adapted to the temper of the times, march progressively on with the enlightened progress of public opinion, with the growing lights of that genuine philosophy which, in the language of Plutarch, is animated by * hope, and confirmed by reason ; and which results not from the fictitious passions of rational creatures, but from those profound investigations of general science, the truth of which every revolving year seems the more to rivet and confirm ; but which have, alas ! been confounded with the aphorisms of that

* Plutarch, in vita Periclis.

wicked casuistry, and with the tenets of that infamous school, whose lessons were, at no very distant period from the present critical conjuncture of the world, directed to the degradation of virtue, and the consequent debasement of man, to the rooting out of the best and the happiest principles of his nature, and to the total dissolution of all laws, all obligations, both human and divine.

These observations are alike applicable to every tract of the earth wherever civilization has taken its seat, and the property of individuals is secured from the irruptions of lawless violence. When, therefore, society shall have been modelled after this manner, so agreeable to Nature and to Justice, and when the diffusion of knowledge shall have become more universal, from the invention of printing having altered the whole fortunes of the race, and having rendered the condition of societies essentially different from what they ever were in those states from whence our great political examples are drawn, then an entire new feature will be given to the whole system of European polity, and every rising

sun will glow on the unrestrained advancement of moral, of political, of religious, and of scientific truth.

The momentum and the efficiency of government will soon be lost amongst nations plunged in ignorance and immersed in superstition, because despotism then becomes necessary ; and this, by prevailing at the centre of a state, will make weakness be felt towards the extremities. Yet there are men of grovelling conceptions, who will never profit from the lessons of experience, who fear the progress of instruction, who presage the most convulsive storms from the diffusion of those truths which reason daily brings to light, and who figure to themselves no safety but as long as the multitude continue unenlightened. I say “grovelling ;” for that spirit of an individual may properly be termed so, which militates alike against the inseparable interests of knowledge, virtue, and religion. It is difficult to ascertain the source from whence these men derive their precedents, although it appears to reside in the exuberant soil of Eastern despotism, where it is maintained, that the

vulgar and unlearned have no right whatever to truth, but must be kept in order by delusion ; where the rites of hierarchy are supported by the liberality of superstition, and men's minds are not illumined by the blessings of revelation, or the precepts of natural religion ; where the heavens are peopled with imaginary beings, and men are taught to worship the banners of tyranny as the unfurled ensigns of the prophet ; where the ruling principle of government is to stop the cultivation of the sciences, by the intervention of authority ; where the horizon of knowledge is never known to retire, because the mind is never allowed to advance ; and where the criterion of a wise code of legislative polity consists in retaining human reason in a dreary, a perpetual state of sameness and stagnation.—The minds of heathen philosophers, intoxicated with the charms of virtue, formed a system of ethics that banished the very frailties of self-love, and steeled the heart against the suggestions of Melancholy ; but however exalted may be our tone of speculation, yet it is impossible not sometimes to

betray symptoms of weakness, by giving way to the silent dignity of sorrow, and by letting flow the consoling tear of tender sensibility, upon reflecting how much man has been made the sport of fortune and of accident. When we revolve in our minds how often the foundations of human institutions have been overwhelmed by the struggles for supremacy, carried on by the advocates of truth and of error, we may naturally ask, whether there is any thing in the accents of the latter more grateful than in those of the former ? If there is, then embrace and fortify the same by all the bulwarks of power. “ *Si quid,*” says the Christian philosopher Marcus Antoninus, “ *si quid in vitâ humana invenis potius justitiâ, veritate, temperantia, fortitudine, ad ejus amplexum totis viribus contendas suadeo.*” The wrecks of time will be felt, and ages will make their devastation ; but is there no level we must seek to find ? no standard by which all our general principles must be ultimately resolved ? Yes there is, and that standard is the inward nature of man. Here the opportunity of remarking, that we are not to bound,

by the short duration of life, our career of civil, military, or literary glory, is too fine to be lost. Nor is this all; for the saying of Oliver Cromwell, that a man never “soared higher than when he knew not whither he was going,” is little applicable to those steering the agitated vessel of the state: it is not for them to resemble the members of a savage tribe, who, alike regardless of the morrow and their forthcoming posterity, spend the round of their appointed days in sensation, not in reflection; in gratifying their appetites, not in cultivating their reason, and in maturing those higher powers with which Providence has blessed all orders of men. It is no less the duty than the interest of the Statesman to act from principles firm and established, for every bane to have an antidote, and to proceed on an enlightened anticipation of future events, by founding his grand maxims of conduct, not on the vacillating opinions of the multitude, but on a steady, calm, systematic wisdom, on an extensive and impartial survey of human affairs, on a knowledge of remote and extensive conse-

quences, on an exercise of that provident sagacity which so remarkably characterizes some of the lower animals, and on a serious reflection on those scenes wherein man has acted so distinguished a part in the dismal drama of the world. Nor is this a task of so difficult execution as has been often imagined ; although, to exhibit the developement and the proofs, as well as to unfold its real nature, would require a much greater scope than either the limits of this work will admit of, or would be consistent with its general design. I shall close, therefore, what I have to offer upon this subject with merely observing, that all our reasoning concerning the future situations of men is rendered extremely precarious, from the invention of printing having formed an entire new epoch in the natural history of man. Opinions once held sacred have been impugned, and the ascendancy over men's minds, which these opinions formerly possessed, has gradually and imperceptibly given way to principles settled in man. What will be the ratio of future improvement it would be vanity or

folly to estimate ; but it is a remarkable fact, that, in all European countries, the spirit of legislation has been at least a century behind the general spirit of improvement. Writers upon government have not sufficiently attended to this ; they have, by disregarding the progress of human thought, by drawing their principles of political science from those states under which they have happened to live, and from precedents too remote to be of any authority, much less adapted to the aggregate temper of the times, embraced the tyranny of ancient prejudices for the first principles of reason. I do not think it extravagant to affirm, that the older the world shall become, the more the history of states will exhibit the transcript of a people, instead of the caprices of a few leading individuals. In searching for the foundations of power, and the true data of legitimate government, it is expedient that we travel not out of the record : the elements of each are laid deeply in the science and the nature of man : whoever seeks for them in other sources will find impediments placed to his pro-

gress ; and, if he knowingly promulgates one untruth, he will need a hundred others at least to support it. The task is certainly difficult, and seems to require no ordinary acquisition of genius ; to divest the mind of all prejudice during its pursuit in this spacious field of temptation, is almost more than human : at any rate, *his* mind must be pronounced to be strong indeed who can do it.

Under whatever sun we may chance to live, yet, as man is born in society, there must be a paramount authority lodged somewhere. To what particular hands this authority had best be entrusted, or what modification of the social order is most conducive to the sum of general prosperity and of national security, we have no business in this place to consider ; however great the discrepancy of opinions on this subject may happen to be, yet we must regard the law as that supreme, sovereign will, to which all men must equally conform. And, although the materials, on which the political genius of man is to operate, are no less various than complicated, still the drift to which his labours ought to conspire is extremely simple ; it is nothing less than to

maintain the happiness and the safety of that community of which he is a member. The Legislator is, properly speaking, the guardian of mankind ; he should neither know nor acknowledge any partial interests ; for, as he is the minister of public good, so he becomes the interpreter of the public will. “ *Salus populi suprema lex esto*,” although in the mouths of all men, and the foundation of all human laws, has been lost sight of, and the provisions it evidently tends to enact, have been hushed amidst the blaze of more powerful instincts. In all inquiries upon the subject now under consideration, we must take the collective body of society as the model and the standard of specific excellence ; we must not reason upon human nature in the abstract, because it no where exists so. Men fond of speculative melioration are apt to forget, that liberty consists not in a total exemption from restraint ; and that, as security of person, with the enjoyment of property, are the essence of freedom, so there can be no security without a wise and beneficial system of polity. In the machine of government there are many things of subordinate im-

portance, which must be overlooked in the complex fabric of the whole ; but, if the centred force of human wisdom could so regulate the impulse of the general mind, and bring it to that eminence of thought, which shall exclude all partial interests, and prevent any aspiring individual from usurping an authority independent of the laws, then the end at which a wise Legislator ought to aim would at once be accomplished : moreover, as all partial interests disturb the counterpoise of legislation, and as the political value of men is always to be rated according to the measure of safety or prosperity they can bring to the state, so no individual should consider himself as exempted from the general lot of the community.—Having premised these few remarks on the scope of legislation in general, it may not be amiss to extend the subject a little further, by drawing those corollaries which seem to flow from the propositions already laid down : and here it is of consequence to remember, that Nature revolts against all sudden transitions. Men, however, of superficial views, who easily fall into

the contagion of popular errors, are apt to think, that, if we detract from the *form*, we change the *essence* ; they forget that we may alter without abrogating.

In scaling the ladder of refinement, we are apt to make a surrender of rights, but law should never gain ground upon equity ; for, as * “ *honour is the principle of monarchy*,” so equity is the basis and the soul of law. Although a very refined and commercial people seem to require a very comprehensive system of judicial policy, yet the more perfect is the state of society, the more simple will legislation become. The test, therefore, of a well-administered government, consists in having its code of civil, criminal, military, and ecclesiastical polity so framed, as to acquire wherewithal that precision, and that unity, which will make punishment speedily follow crime, whilst the stern obligations of justice are executed with the spirit of mercy ;—will effectually prevent the frequent commission of fraud

* Le Président Montesquieu.

and iniquity from being intrenched in the intricate labyrinths of law;—and will so regulate the spring of social order, as that the ends of substantial justice shall not at once be defeated; guilt placed beyond the arm of authority, and the very purpose for which government itself was instituted, rendered abortive, by the uncertainty prevalent in its system of jurisprudence, and by the complex, vague, and indefinite interpretations affixed to its multifarious edicts. As good morals, taken in their most extended sense, constitute that electric fluid which must vivify the whole machine, and form the strongest rampart in defence of the public weal, so the line of circumvallation will never be complete, nor the laws receive their proper veneration, as long as their spirit destines one half of the community to the * vilest intrigue, the most

* In illustration of this remark, I might mention, that no inconsiderable part of the political, the commercial, and the financial administration of this country, by striking deeply at the root of all public morals, poisons the sources of individual felicity.

abominable corruption, to fraud and hypocrisy, to indigence and servility. Moral thunders may roll for ever, to little purpose, whilst the siren voice of bad laws is heard behind the scenes. If we despise glory, we despise the virtues that lead to it; and if we love liberty and happiness, let us cherish the virtues that ensure them. That central system, that strong federal union formed by an august simplicity of manners, and that moral greatness of character which so remarkably distinguish some states during a certain period of advancement, appear to be gradually departing from the societies of men; to whatever new order of things, or new arrangements of policy their absence may give birth, still we are at least permitted to hope, that it will not banish those fine feelings cemented by every endearing association, and inspired by the sentiments of religious love. If, notwithstanding all our endeavours for the prosperity of men, some partial disturbances should sometimes happen to arise, yet these, the executive, if well administered, can always check; and I much question whether a wise

Statesman will not secretly rejoice at their temporary appearance; for although good order at home indicates the energy of law, yet national tranquillity is not always the sure ensign of political prosperity; on the contrary, a general apathy of manners, and a long interval of quiet, always mark a declining people, and presage the approach of some awful storm. In saying this, however, it must be remembered, that whenever a prevailing faction has the alternate ascendancy in public affairs, to the exclusion of distinguished ability and virtue, it proves there is a separation of interests; it foretels tyranny somewhere; and it will terminate in a fatal species of corruption.

It is necessary here to retrace a little the steps I have taken. Although I have said that for every bane the Statesman must have an antidote, yet, in all comprehensive schemes of human policy, we must, as has before been observed, rest satisfied with consulting the general nature of things, and that complexion of affairs pervading the whole system: for it cannot have escaped even the most superfi-

cial thinker, that if we maintain too fine a tone of speculation, or legislate too minutely, something adventitious will arise to confound our proceedings. Although chance never mingles with counsel, yet matters of subordinate import are best left to circulate freely in their own (apparently) fortuitous channels ; when thus left to themselves, they will instinctively find a route leading them at last to their own conciliating proximity. For the characteristic of *Time*, when not clogged by the enactments of *Law*, is friendship, not hostility : of this we have a convincing proof, in its tendency to reconcile and familiarize men of the most hostile principles, and nations of the most discordant manners. And, instead of looking forward to an unvaried course of prosperity, it would be much better to say, that, in the great scale of national transactions, we must, not unfrequently, both at home and abroad, expect the presence of disasters and calamities. It is unquestionably true, that without premises there can be no conclusions, or without data, no calculations ; yet these

disasters and calamities, every wise, provident Statesman would do well to take into the compass of his reckoning, and consider them not as given or determinate ratios in the science of political arithmetic, but merely as parts necessarily forming that kind of *cæsural* pause in the political metre, which will be most perceptibly felt ; or, if we must adopt this language a little longer, they may not improperly be termed those coefficients making up the great political equation.—Having arrested the attention of the reader thus far, it seems reasonable to conclude, that the wounds inflicted on a state, though at first alarming, must seldom be pronounced mortal ; for if they have not penetrated extremely deep, they will be healed, and we may expect a gradual, though not a rapid recovery. Indeed, so evident are the marks of Divine wisdom ; so convincing the proofs of one superintending power, moving and governing the whole machine ; so much is the course of human affairs regulated by the impulse of general laws ; and so striking are the appearances of order and design in the universe,

that every community contains within itself a strong vital principle of action, which, like the attraction of cohesion, operates to prevent dissolution. It follows, from the foregoing remarks, that a good citizen will never despair of the fate of the commonwealth, as long as the nourishing sap of public virtue remains, or as long as those entrusted with the guidance of national affairs do not, by their conduct, forfeit all claims to public confidence.

That what is prudence in the internal economy of * a private family, is not folly in the conduct of a great kingdom, is one of those truths which Mr Smith has brought to light with demonstrative evidence, and every apparent deviation from its certainty, has the more fully tended to verify its proofs ; so it may now be considered as one of those standing laws which must hereafter regulate the political order of the universe, and will live

* I think it is of importance here to add, that I have extended the meaning of Mr Smith's principle further than he himself has ventured to do.

for ever, as will the glory of him who discovered it. The wand of Popilius might intimidate the army of Antiochus from advancing further than the circle before him ; but no wand, no insignia, no state craft, can long resist that battery worked by the common sense of mankind,

* “ *Sta miles ; hic optimè manebimus :*”

However remote the period, yet the day will certainly come, “ *erit, erit illud profecto tempus, et illucescer aliquando ille dies,*” when what is true *will* be told to the furthermost corners of the earth ; when even the wild inhabitant of Sinai’s mount will be convinced that the coffin of Mahomet is not for ever poised in the air between humanity and justice ; and the oriental Brahmin will not “ live in a subordination which knows no resistance, and slumber in a voluptuousness which knows no wants.” † However forcibly wedded governing authorities may happen to be to the

* Titii Livii, lib. 5, § LV.

† Orme’s Hist. of Milit. Transact. of Indostan, vol. I, p. 178.

errors of established institutions, yet he that wishes well to that country which gave him birth, and in which the bones of his renowned ancestors repose in silence, will never disturb the tranquillity or the good order of society ; he is sensible, that amongst all the democratical states that have hitherto been, there is a kind of projectile impulse, which no centripetal forces are able to circumscribe within those bounds necessary to the maintenance of public safety ; he will seek no remedy in the vicissitudes of faction, in the wild agitations of democracy, or in the drawn scymitars of prætorian bands ; and he who does not know that the call of the state, in defence of his country, is paramount to all other things, has one of the most important lessons of civil society yet to learn. A good citizen has no communication with bad men ; he makes his appeal to the hearts of the good, through the medium of their understandings ; and although his own may bleed at the reign of vice and of infamy being so much prolonged over innocence and virtue, yet, if he transacts his business well in

the regions of Truth and inflexible Honesty, he, or his posterity, will most assuredly witness that scene of natural death which, sooner or later, all blind prejudices will certainly die. “*O magna vis veritatis,*” exclaims the immortal Tully,* “*quæ contra hominum ingenia, calliditatem, solertiam, contraque fictas omnium insidias facile se per se ipsam defendat !*”

As a commentary on a small part of the foregoing reasoning, I might appeal to the memory of recent transactions, as well as to others of no very posterior date. Had the unfeeling, corrupt, and profligate monarchs of the Continent, instead of acting as traitors against the community of Nature, instead of reverencing the most glaring abuses in every department of state, instead of forming artificial barriers, and drawing systematically impassable lines of separation round the different orders of their dejected subjects ;—had they, I say, only attended to

* Cicero *pro Cælio.*

those simple, yet gradual innovations, which Time had effected in the political fabric, and which Nature and Justice alike so strongly recommended ;—had they also but identified their own interests with those they were entrusted to govern, and attended more to those fine moral ties, connecting, in a beautiful progression, the very heart of man with the great Author of his being ;—had they, in their foreign and domestic concerns, increased the number of those interested in defending the national establishments, by lending an ear to the silent, yet pathetic language of the unhappy, by placing no political head at every part of the monarchy ; by forming no divalent attractions in order to disturb the quiescent ; by causing the interests of all to converge in one common centre ; and by considering the lower orders not as subordinate members in the great scale of society, but as “*humiles amici*,” whose good all men were equally engaged to promote, then the fears, “*ne quid Respublica detrimenti caperet*,” would have been greatly diminished ; then the chronological table of the last twenty years would

not have been blackened with so many catastrophies : the affecting tragedy of Europe would not have been performed ; and, amidst the various shiftings of the scenes to which that deplorable event has given rise, the existence of so many monarchies would not have been threatened, and that of others completely overturned.—Whether the rays of Truth are liable to scorch, when not checked in their fervour, or suffocated by the intervention of some foreign medium, I shall not stop to examine ; but it is a fact as certain as the sun forms the centre of the system, that neither national happiness, nor national security, can long be purchased out of those laws which Nature has prescribed to man ; and he who expects to propound a system that shall be wiser than her, is come too late with his discovery. “ *If we neglect the gods,*” says Plutarch, “ *the gods will neglect us;*” and as the people form the heart of the circulating system, I shall beg leave to add, as a parody on the expression of the Grecian Statesman, that if we neglect the people during the season of prosperity, they will neglect us during that of adversity.

Having taken this short sketch of the natural history of man, let us now proceed to examine the *general* scope of Dr Cullen's writings.—We may admire the ingenious speculations of this illustrious man, who seemed destined to soar above the common level of his species, and to be one of those lights which Providence sometimes sends into the world to teach and to instruct mankind in the knowledge of her mysterious laws ; but it is quite incompatible with the dignity, and the beautiful precision of science, to stamp all Dr Cullen's writings with the character of scientific truth. It little becomes me perhaps to assume to myself the task of appreciating the splendid exertions of others ; but, in an inquiry professing to consider the general outlines of medical science, it would be unpardonable to pass over the name of this truly eminent man, who was justly esteemed as one of the brightest ornaments to that profession it was his province to exercise, and as shedding a high honour on that country which produced him. Dr Cullen was a most patient and accurate observer of the various appearances the hu-

man frame exhibits in sickness and in health. His synopsis and classification of diseases, however redundant it is in its terms, forms a most valuable index to guide the student in medicine. But there are many parts of his writings wherein he has indulged in such theories, and in such a false spirit of generalization, as can never be justified by the solid and legitimate rules of philosophizing. Has not his ardent mind sometimes tempted him to draw such hypothetical conclusions as rigid observation never could warrant? Has not his unbounded ingenuity in many places usurped the place of more humble observation? Have not his views, though always luminous, been too much blended with conjectural opinions concerning the efficient and proximate causes of diseases? Have not his hypotheses too much modified his practice, and has not his belief in the supposititious existence, and real discovery of the proximate causes of diseases, led to an abuse of general principles in the science of medicine? Since it is universally agreed, that the proximate causes of all diseases are not only very ob-

scure, but can seldom or never be learnt with precision, what advantage can ensue by deducing them by mere conjecture? * That

* Many of the objections that may be urged against the three last paragraphs, I can readily anticipate. The nature of this work is limited to a general survey of the science of medicine, and admits not of any detailed illustration upon the points it embraces. It will not, however, be travelling much out of the path I had laid down to myself, if I notice what strikes me, as being the most valid objection that can be started against the tenor of the paragraphs in question: Some will say, that like causes generally produce like effects, and that a removal of the cause of the disease will be followed by a cessation of its effects. This reasoning, though plausible, is not just; if applied to diseases dependent upon any local injury, (whether apparent, or known by the symptoms of the patient to have an existence) it is much more forcible: Further than this, its practical application will, I believe, be found extremely limited.—If many diseases, with which we are at present unacquainted, should be found to have their seat from a disordered state of the intestinal canal, or in a repletion of that viscus, here it is sufficiently evident, that a removal of that mass from the intestines, and restoring their healthy action, is the best curative indication that can be resorted to. I introduce this as another instance in which the foregoing reasoning is not inapplicable.

the practitioner is not only embarrassed from this plan, but that most serious injury has frequently resulted therefrom, will not be denied. Conjecture is, from its very nature, uncertain. "True fortitude of understanding," says Archdeacon Paley, "consists in not suffering what we know to be disturbed, by what we do not know ;" and in another place, that "the uncertainty of one thing does not necessarily diminish the certainty of another." These aphorisms appear to me to contain the fundamental principles upon which Physicians ought to proceed. There is a species of rule and of art, which is nothing else than methodized Nature ; but when Dr Cullen says, that "the phenomena of fevers lead us to believe, that they chiefly depend upon changes in the state of the moving powers of the animal system ;" when he goes on to remark, that an atony on the extreme vessels of the skin is the proximate cause of fever, and when he forbids the use of purgative medicines in fever, from their tendency to rivet the spasm on the extreme vessels, it must be evident to every person,

at all acquainted with the subject, that these conclusions of Dr Cullen are not only at variance with the known laws of the animal œconomy, but that they involve suppositions which, if acted upon, might lead to results the most dangerous. When, in speaking of gout, he says, “Thus, when the atony has taken place, if the reaction do not succeed, the atony continues in the stomach, or perhaps in other internal parts, and produces that state which we have, for reasons now obvious, named the *atonic gout*,” he appears to me rather to have confounded than elucidated the subject of his enquiry. It is this habit of neglecting simple *media* of proof, and of devising so many new principles, in order to account for the phenomena of diseases, that darkens the evidence of the clearest truths, and renders them quite problematical. I have selected the preceding specimens of Dr Cullen’s reasoning, that the reader may not think I have made assertion tantamount to proof; I shall, at some future time perhaps, enter much more minutely into the subject now under review.—There are some Physicians, who, in

their systems as well as in their practice, seem to have mistaken the living animal man, formed by the infinite wisdom of the great Creator, for the machine fashioned by the limited powers of the human understanding. They have supposed that every deviation from the standard of health in the one, like every irregular movement in the other, could soon be corrected, and soon repaired, by the officious hands of Art. I do not say that Dr Cullen is to be ranked amongst this class, although some parts of his writings do certainly favour this idea. Cullen, undoubtedly, was to Physicians what Newton was to astronomers, and his works will attest his fame to future ages ; but would not a still higher portion of honour have redounded to his memory, if he had not sought to solve some problems, which our imperfect understandings can never demonstrate ? Upon the whole, as there are many states not possessing sufficient virtue to be free, so there are many systems not possessing sufficient data to be sound ; and amongst the latter, I am much disposed to classify many of the

speculative parts of Dr Cullen's writings.—I shall in this place take occasion to remark, without meaning in the least to refer to Dr Cullen, that this idea of comparing created man with a machine of human contrivance and design, and this manner of explaining the phenomena of the body by that analogy which the productions of art sometimes present, is another striking cause that has done real injury to medical science, and kept it in its present low state of improvement. Every species of mechanical philosophy ought to be kept most strictly apart from the science of medicine; they are totally distinct, and separated by an insuperable line. Those who are desirous of comparing the human body with an automaton, and expect that diagrams and systems can be constructed, which shall in a manner develope its various springs and habitudes of action, mistake the object, as well as the nature, of that science we are now considering; such is not the plan by which a just standard of analytical inquiry can be obtained, nor does it embrace the principles whereby the science of medicine can be advanced.

Section Twelfth.

THE period of authentic history is extremely limited, but where fable ends, there history may properly be said to begin ; and the history of every science is desirable, as exhibiting a just picture of the various steps that have led to its improvement ; but in no department of human research, is an historical statement less valuable than in medicine. Before the days of Hippocrates, the pages of the science were little else than memorials of human superstition. The birth of this man forms a remarkable epoch in the history of medicine, as it was he who first taught Physicians to consult and interrogate the ways of nature, to register facts, and attentively examine those phenomena which do really result from the functions of the living body. In quitting the footsteps, and in discarding the authority of his venerable name, Physicians plunged once more into the grossest acts of credulity, until they were at last hap-

pily reclaimed from their career of imbecility, by the revival of the sciences shedding a new lustre on that Europe, once the manufactory of Truth, but so long a prey to the darkness of northern barbarians, so long the tennis-ball of Fortune, and so long the soil where the midnight horrors of desolation, heathenism, and superstition, stalked triumphant. Although, however, the same gratuitous paths of speculation, which the ancients roamed in, have, it must be confessed, been too frequently trodden by the moderns, yet the knowledge of this circumstance is not void of utility. To lose the palm of victory, is revolting to the feelings of the proud, but to receive generosity at the hands of the victor, extorts the praises of the conquered ; let us, therefore, not insult the manes of those who are gone, for the undesigning errors they may have committed ; although it must not be disguised, that, in medicine, it is a task of no small difficulty to distinguish between that strong bias arising from sincere conviction, and that baseness which infallibly results from wilful misrep-

sentation. Had we not these errors presented to our view, we ourselves, at the present day, might probably have committed the same ; on this account, it is far more honourable and more praise-worthy in us to profit of the past follies of mankind, than to copy or to lash them with too much severity ; they serve not as land-marks to guide, but as warnings to deter, generations yet unborn from pursuing the track of frivolous curiosity. As in the conduct of the heart and the understanding, it is sometimes useful to witness scenes that we ought to avoid, as well as see patterns that we ought to imitate ; so, in like manner, the errors of past generations become salutary to those which are present. What conspires sometimes to interrupt the general harmony of Nature, is not our business to investigate ; but those wanderings of imagination, which disturb the circle of the sciences, we are well employed in correcting. Our principal aim *now* ought to be, to obtain, as far as is practicable, a clear and distinct view of those subjects, and those truths, we propose to investigate. Let us never fail to

remember, that there are many phenomena of the human body which cannot be explained, except by a certain power which the Deity has not hitherto revealed to mortals. Microscopic as the eye of man undoubtedly is, more than doubled in its force, as the human mind certainly has been, since the application of Algebra to so many new objects, to the full developement of which it never could have reached, without the happy intervention of this science ; notwithstanding that subjects, formerly considered of an occult nature, are now resolvable into a few simple admitted principles ; and that we can, by a rigorous, yet chaste method of calculation, not only bring things within the compass of moral certainty, at which we could formerly no more than guess, but that we can also, by this same species of analysis, discover the prevalence of general laws, where we could, at no very distant period, perceive only the operation of casual and fortuitous circumstances ; yet who can demonstrate the base of vitality ? Who solve the problem of creation ? Who can prove that the brain *alone* is the

seat of intelligence, and that *mind* is not spread over every part of the body? Speculations of this kind are less solid than they are sublime, and controversies concerning them had better be avoided. There is a certain homage which Virtue willingly pays to true Science, but which Medicine has never yet deserved; and this homage will be withdrawn from Science itself, if she dares to substitute the shadow for the substance, the phantom for the reality.

Men that have been accustomed to search deeply into the nature of evidence, have always found, that they arrive at a certain point, about which no further explanation can be given: they rest satisfied with having ascertained the general fact; they can expound the intermediate steps by which they arrived at it, and further than this they wish not to carry the argument: indeed, they think it no disparagement of their ability thus manfully to confess their ignorance. It is this species of investigation, that every person, interested in the advancement of science, must wish to see introduced into medicine;

and I am guilty of no solecism whatever, when I say, that it is extremely simple, yet profound.

How many volumes have been written on the origin and nature of fever; *but, if* the prevailing opinion is found to be true, that it arises from a general or a specific contagion, the former giving rise to typhus in its various forms, and the latter to the class of *exanthe-mata*, or eruptive fevers, here two very important facts are at once ascertained, the examination of the laws and effects of which, as they tend to influence the state of the animal œconomy, together with the just application of the same to practical medicine, is pregnant with extensive consequences.

Language, although strictly an analytical method, is one of the most fertile sources of error; and, in quitting the study of particulars for things more general, how apt are we to forget that Truth is the axis round which the speculations of men should revolve. The occult qualities of the Aristotelians could not, in my opinion, involve a greater train of absurdities than the following passage, extract-

ed from Dr Darwin's *Zoonomia*: “ *Fever consists of one or more disordered tribes of associated motions;*” “ *hence fever will be more or less complicated according to the number of the tribes disordered.*” If common sense is that point to which all men must ultimately appeal, what will be its verdict upon many parts of the writings of this truly ingenious and fanciful author? To place my own idea in a still stronger point of view, it may not be amiss to remark, that if we say our system contains a prevailing *archæus*, or latent instinct, prompting what is right, and creating an aversion to whatever is wrong, we evidently impose upon ourselves, through the deceitful medium of words, and fall at once into the legends of fable. We know that our nature is endowed with a power, that will restrain the influence of partial disorders, and generate new parts to supply the deficiencies caused by sudden violence; call it by whatever name physiologists choose, “ *a vis conservatrix et medicatrix Naturæ*,” or any thing else, its existence, however, is certain; we have no business to investigate its cause,

but it resembles in its effects that same principle which is inherent in all human institutions ; a principle tending to their improvement, and overcoming slight obstacles, it resists those partial attacks by which the body corporate, as well as the body politic, are sometimes assailed, from the abrupt interference of men, or the sudden incursions of accident. The great end of the Physician and the Legislator is not to thwart or counteract the salutary designs of this mysterious agent ; they are better employed in assisting its effects, by superadding the lights of wisdom to the benevolent intentions of Nature.

If the past history of mankind, from the days of Cambyses the Persian, and Cyrus the Mede, up to the present eventful hour, when all Nature seems convulsed to its centre, and to rise up in one general insurrection against the majesty of ancient dominion ; if, I say, the past and the present history of mankind teach us, that the greatest security of every government consists, not in extent of territory, not in fortified places, or in stand-

ing armies, but in the virtue, the zeal, and the affections of its people ; so it may be laid down as a standing axiom in medical science, that its principal support will be found to reside, not in scholastic refinements of acute reasoning, but in a simple, chaste induction from many well established facts.

Section Thirteenth.

BEFORE entering on the study, much more on the practice of an art, the ancients supposed that the mind should be well trained to exertion by a certain preparative or $\Delta\acute{\nu}\alpha\mu\varsigma\acute{\nu}\alpha\lambda\upsilon\tau\iota\chi\eta$; and so convinced were the more enlightened Greeks of this important truth, that Plato caused it to be inscribed over the door of the Academy, “ *That no one entered there, who had not studied geometry.*” In medicine the case is widely different, for the student plunges at once into the vortex of his art, and is left to establish some fixed general principles of practical conduct alone, by the slow hand of dear-bought experience : he has no analytical me-

thod for conducting or abridging his studies ; he is consequently immersed in difficulties, and left to be steered by his own undirected will. A fortunate coincidence of circumstances, operating on a well-turned disposition, has often been the means of supplying that to his mind, which he in vain looks for in the systems of his art. In the other sciences, the several advances of discovery can generally be measured with some degree of precision ; —the truths upon which they depend can be made manifest ;—the chain connecting them together exhibits marks of a beginning, as well as proofs of an end ;—the series, and the order in which they are disposed, can be ascertained, and all can be traced up to some admitted principle. Permit me to ask, Whether the same things can be done in medicine ? I shall not anticipate the answers to this last question : the pride of science has endeavoured to explore many things surpassing the efforts of human intelligence ; but the great merit of modern Physicians is of a negative nature, that is, they have deserved well of science, not so much by adding, as

by destroying. They have emancipated the science of medicine from that thraldom which the Germans imposed upon it, and by thus imitating the labours of the architect, who first clears away the rubbish, before he attempts to lay the foundation, they may be able to rear a superstructure, which shall attest the efforts of combined and persevering skill. Much yet, however, remains to be done, much yet to be swept away, before these undertakings, so happily begun, can be brought to a successful issue. How far this system of *arrondissement* must be carried, a mind well tempered with discretion, is the best tutor to decide.

The great advantages of printing are, that the acquirements of one generation are secured to the succeeding, and of these acquirements it becomes us to profit ; but in judging concerning the principles of medicine, the maxims of common understanding are the engines that we ought to employ. Splendid as some of the monuments of human genius undoubtedly are, and justly entitled to the applause of the good and the great; yet, I believe,

we shall discover, in the course of our enquiries, that medicine is more likely to be benefited by the humble efforts of observation and experiment, assisted by the solid principles of reason, than by the most brilliant attempts of human ingenuity. These arguments, to some, may appear specious, to others, sophisticated ; in saying that observation and experiment, assisted by the solid principles of reason, are the surest guide to conduct the Physician, let it not be supposed for a moment, that I mean either to reject the authority of great names, or to exclude altogether the doctrinal parts of theoretical medicine ; on the contrary, the science, by such a sweeping step, would degenerate at once to the lowest verge of empiricism, and cease to become an object worthy the care of cultivated minds. When the great Lord Coke said, that “ to trace an error up to the fountain-head, was to refute it,” he invested judgment with its brightest prerogative, and laid down a precept which medical men would do well to examine, in all its various bearings. It is

the duty of Physicians to theorize, and endeavour to give a solid reason for every step they take, every method they employ, in the treatment of diseases ; but their theories should proceed upon those grounds which afford a *nucleus* of proof. Many philosophical works that have descended to us, and escaped the ravaging spoils of Time, most clearly evince, that the ancients did not, by any means, suppose that a previous knowledge of facts was at all an essential step in the formation of theories ; and indeed our own age is not entirely free from this vain supposition ; if Physicians, however, pretend to theorize without a very extensive acquaintance with facts, they will reverse the natural process of discovery, and be in imminent danger of mistaking the crude indigested opinions of their own brains, for the first principles of reason. The science in the days of Hippocrates, on the other hand, consisted almost entirely of a collection of facts, divested of all reasoning ; here, it is evident, that medicine presented a field so extremely barren, as ill suited a luminous mind to culti-

vate ; nor could it, by so confined a sphere of operation, ever receive from Genius that improvement which in after ages it may, perhaps, be destined to attain. Every thing connected with the science, sufficiently manifests, that we are *now* in a much better train than we were during the times of Boerhave or of Sydenham.

Although neither in the political order, nor in the physical constitution of man, can we foretel events with the same precision as in the mechanical system of nature ; yet there is a kind of systematic prudence governing and directing the actions of comprehensive minds, which Physicians would do well to attain. By the help of this, they may be able to reason from principles synthetically, anticipate appearances, and determine upon facts *a priori*. Men of enlightened and enlarged understandings, who grasp at the sweet rewards of genuine science, will not rest satisfied without attempting a clear exposition of every material fact presented to their notice ; whilst, in attending to those things of which experience has taught them

the utility, they will not be as Pope Chigi was, "*minimus in maximis, et maximus in minimis;*" their ruling principles of action, though in themselves simple, will be modified after a chaste induction from many particulars, many conspiring affinities, which would confuse and distract the mere mechanical drudges in business. The latter act by the blind impulse of servile imitation ; and when they hover about the post of danger, have no commanding resources left to provide for sudden emergencies ; when the hour of dissolution hastens rapidly on, they are no longer masters of themselves, but sink under the accumulated weight that oppresses them. To have a hand to execute is of little avail in medicine, if we have not likewise a head to contrive, and a tongue ever ready to pronounce what reason tells us is proper. To illustrate this by the force of example, it may not be amiss to remark, that, to plan a campaign in the tranquil hours of study, is one thing, but to perform a grand scale of operations on the troubled field of action, is another. Ask the veteran, and he'll tell you,

that the fortitude of the soldier in the ranks is of one kind, and that of the general at the head of his army, another. Mere animal courage, restrained within the bounds of reason, by the terrors of martial law, is all that is wanting to constitute the former ; whilst a rare and happy union of various opposite qualities of the head, the eye, the tongue, the hand, and the heart, can alone qualify the latter for executing those deeds of consecrated valour, which must decide in a second the balancing fate of contending nations, cut the agonizing thread of suspence, and sign the death-warrant of Freedom or of Slavery. The Physician may follow with success the beaten track of his predecessors, as long as the *formulas* of his art furnish a guide to direct him ; the Lawyer may forward the interests of his client when the rolls of his court, and the edicts of the judges, afford him a precedent ; but when these subsidiary things are no longer to be found in the registers of office ; when the tempest is raging, and the billows are foaming around ; when the mind must instantaneously recognize its object,

and act as it were by intuition ; when, instead of suffering itself to be tossed about amidst the boisterous waves of a tempestuous sea, and made the sport of the furious eddy, it must fan itself by the soft emotions of complacency ; assuage the painful throbings of anxiety by the gentle zephyrs of sober reason ; and acquit itself to the satisfaction of all, not by yielding to the pressing difficulty, but by the Pandects of its own framing, and by the masterly efforts of unappalled wisdom. Here it is that the active and the speculative powers of man will best be unfolded, and that a reputation for talents will be properly put to the test. There are men in every polished state of society, who measure the perfection of individuals from the sum of erudition they may have attained ; but can those cloistered pedants, forming so great a portion of modern literati, and who look down, with a secret smile of pity and contempt, on that useful ability decorating the forehead of the yeoman, can *they* acquire this habit of mind ? As well might the riches of Cræsus, or the vast treasures

hid in the bowels of Potosi, attempt to purchase that soothing ease and serenity, which the humble tiller of the ground enjoys unbought, throughout the number of his days.

*“ O fortunatos nimium sua si bona norint
Agricolas! quibus ipsa procul discordibus armis,
Fundit humo facilem victimum justissima tellus.”*

GEORGICON, line 458, lib. ii.

If ignorance is only a negative power, as cold is but the privation of heat, what then is wisdom? It is the virtue of intelligence.

If one of the greatest of modern philosophers, Dr Reid, has said, “ that it is genius, and not the want of it, that adulterates philosophy,” with what redoubled force does this remark fall upon medicine. That license, which the common suffrage of mankind has granted to poets and to orators, the sons of Æsculapius have sometimes asked for: they know, that when man seeks for amusement, he willingly unbends his mind, and sacrifices a little sense to a great deal of sound; the lion will sometimes stoop to play with the lamb, and the most exalted minds to the lowest trifles; but this play-

some mood of mankind must not be abused. Men of that correct understanding, which I can conceive, but not express, will attempt to render no flights of intelligence subservient to the lower walks of medicine. They can perceive important distinctions, where an indifferent mortal is not sensible of the slightest shadow of a difference; and they can discover a pleasing harmony, where many others are conscious of nothing but a jarring discord of chaos and confusion. They will, moreover, know when to stop, and when they may safely venture to proceed upon the road of Theory: they will remember, that there is a knowledge which books never yet gave, and which books never will give: they will learn, in the course of their ^{experience}, that judgment extends to places where memory never can enter; and they will recollect, that theories are but the creatures of men, and not always the interpretations of nature.—The well-stocked treasury of opinions we do right in consulting, but we must be careful to separate the corn from the chaff, and to blend not things together totally distinct in their nature.—I

speak with respect for living members ; but is there not much at present taught, which the student is not expected to retain beyond the threshold of the schools ?

The inconstancy of human affairs has, in all ages of the world, formed a theme for doleful speculation ; but reflection assures us, that human opinions are no less transient, and that what in one age was stamped as a masterpiece of man's understanding, has been found in the next to be but a compound of labour and of nonsense. I speak generally, and the limits of this work compel me to do so ; but the instructive page of history affords abundant materials in proof of this fact. When man contemplates the works of creation ; when he meditates on the infinity of atoms around him ; when he listens to that silent eloquence of universal Nature, which makes Day speak to Day, and Night to Night ; and, lastly, when he observes that all around him conspire to manifest the goodness, as well as the design, of a first cause, he is prompted, by the very constitution of his being, to enquire after, and

to scan the phenomena exhibited to his senses. Accordingly, Physicians have not been idle, they have largely contributed their mite to the various systems of causation and effect which have been formed; and, regardless of those narrow precincts limiting the enquiries of human intelligence, they have stepped beyond those very barriers that Nature herself has placed to their progress. To discover the secret springs of the heart is at all times difficult, but *innovation*, not *improvement*, forms but too often the cardinal point of reformers. The glory of framing a new system, which should eclipse the product of slow and persevering industry, has made men pant for distinction. That admirable principle of Grecian education, which taught the aspiring to remember that they were born for their country and not for themselves, has, alas! by speculative men, been too often forgotten. Those willing to appreciate real science and solid virtue, will not be insensible to the transcendant merits of Dr Reid,

“ *Palmam qui meruit, ferat;* ”

His valuable life was devoted, not to rear up, but to destroy. What Berkeley, *Hume, and others, spent so many years in acquiring, Dr Reid had the unfading honour to refute. Happy would it have been for the science of medicine, had Physicians attended more to the histories and to the effects of diseases ; to the laws of the animal economy ; and to the establishment of undeniable facts, than to speculations concerning their proximate causes ; we should not *now* have been at the fatiguing pains of pulling down so much of that stately edifice, that fanciful Mosaic, which the genius of ancient pedantry so vainly erected. This simple plan, however, has hitherto but ill suited the pride of learned sophistry ; something which wore more the semblance of mystery, could alone be received and acknowledged as orthodox. I will not now venture to explore the labyrinths of that misguided policy which

* I of course here can only be understood to speak of Mr Hume's metaphysical works, and of the leading doctrines in his Treatise of Human Nature.

was once practised ; indeed, if I am not much mistaken, the time is not very far distant when the members of our profession will disdain the adventitious supports their predecessors had recourse to : It is impossible for them much longer to maintain their empire, from the rapid diffusion of knowledge amongst all classes of people, and the greater number of thinking men added to every community where the press has enjoyed an unrestrained freedom. When I survey the *album* of great names, and recollect what the fathers of medical science have done, I feel mixed sensations of admiration and regret ; of admiration at the extent of their labours, of regret at the misapplication of their talents. The manner in which men were formerly initiated into the secrets of courts, and that false species of wisdom by which the world were formerly governed, have been laid open ; the knowledge of the links of that general chain of international policy which binds and draws distant communities towards each other, and which was once confined to the closets of the chosen

few, is now made matter of simple understanding: even legislation itself is likely to acquire such a simplicity, a comprehensiveness, and a number of first principles, in consequence of the introduction of a new science, comprehended under the general term of political economy, as promises the most beneficial results. The further we advance in the career of civilization, the more those simple truths, which add an inexpressible charm whenever we relate them, appear to be developed.—A fermentation of reason, as well as a corruption of taste, have at various times had their ascendancy over the opinions of men; a species of intellectual toil has been dignified with the name of useful erudition, and to which it bears as little affinity, as the conclusions of Bacon do to those of Paracelsus and his followers. Is it going too far to say, that the knowledge of the peasant is, in many things, equally valuable with that of the philosopher? The human mind, I cannot help adding, could hardly be expected to suffer more from a total contempt of learning, than

it does from that false importance which is given to some species of it, particularly that having an unmeaning phraseology for its object. “ Go,” said the hardy Spartan to the Athenian moralist, who was speculating concerning the *nature* of virtue, “ go,” said he, “ and learn to *practise* it:” He might have added, “ I myself will contentedly eat my broth on the banks of the Eurotas, and think not about the cause of its blackness.”

Heavenly contemplation may delight to dwell in the closets of the speculative, and the elaborate volumes of the studious may be mistaken for the genuine language of Nature; but if we would know the true nature of man, we must not alone be contented with attending closely to those studies having the human mind for their object; we must likewise take an extensive range over human affairs; we must observe, with our own eyes, the complicated texture of civil society, as it exists under different climes; we must see mankind in all its varieties of shapes, or in all the gradations of civil life; we must witness those instructive scenes where the great sen-

timents of the heart are awakened and brought into play ; we must view our species diversified by habit, by moral, physical, and political causes : In short, we must know what the game of human life is, by playing our part in the great drama of the world. —Now comes the application of the parallel : If we would know the true nature of disease, we must not rest contented with studying it in the closet, in the relaxing shades of academical retirement, or in the castles of repose, over the faint glimmerings of the midnight oil ; these are not the seats where practical Wisdom takes up her abode ; she seeks for the conduct of real affairs, where she incurs no danger of substituting the visions of fancy for the materials of reality. We must, likewise, study it by the bed-side of the patient, and observe the genius of variation pushing through all its stages, both in the sound and morbid state of the body ; we must obtain as correct a knowledge of the history of the animal economy, and of the various diseases incident thereto, as the state of medical science at this juncture is enabled

to afford: To these acquirements we must add a thorough acquaintance with the bonds of that intimate connection subsisting between the sciences of Anatomy, of Chemistry, of Botany, of Animal and Vegetable Physiology. Even these studies, few and important as they are, comprise, however, but a small part of what I should call a perfect system of medical education. The Physician should, in my opinion, embrace a still wider range;—he should, to a knowledge of the history and the language of Greece and of Rome, (those hot-beds of all succeeding excellence,) acquire that spirit of geometrical analysis, which can only be learnt by a diligent attention to the writings of the ancient geometers, to the purest of the sciences, and to the principles of universal grammar. He should extend his views to the varied exemplifications of Truth, to the science of Reason, to Natural and to Moral Philosophy, including, in the latter, not that despicable trash which unnerves the understandings of men, and blights the chaste admonitions of intellect, but that dignified, comprehensive

system, which considers man, in regard to his intellectual and active powers, as well as the member of a political body. In the execution of these important tasks, however, we must not force our minds, like as the gardener does the hot-house plants committed to his care ; our active and speculative powers should go hand in hand, so that, by a union of theoretical knowledge and practical skill in the same individual, the character of man may then appear in its highest perfection. Many, I know, will call in question the expediency of such a systematical plan of education as is here glanced at ; be that, however, as it will, I may be mistaken, and perhaps I am so, but I believe that it is only in this manner that the Physician will be able to attain the elements of that rational logic, which is the best instrument for honourable and for virtuous action ;—which will encrease his own happiness, while it extends his sphere of dominion over nature ; which will prevent him from mistaking prejudices for principles ; which will prepossess him on the side of truth, strongly fortify him

with its dictates, and attune his mind to an exquisite relish for all the beauties of nature and of art ; which will, without generating a forbidding aspect of arrogance or presumption, make him feel a manly confidence in the clear, simple, unsophisticated deductions of Reason, and point out to him that well-marked line, beyond which no ingenuity can possibly pass. If Cato loved virtue on its own account, and not for the applause that it brought him, on that same account should Physicians love the sciences. Without dwelling longer on the subject of moral and intellectual education, I cannot help observing, that there are few things more equivocal, or more difficult of explanation, than the talents of medical men, at least as the art of medicine now continues to be practised ;—for many reasons (which, by the way, it would be easy to adduce,) there are few departments of intellectual research wherein the minds of men are so nearly reduced to a level as in medicine. Indeed the lowest understanding is often placed upon a par with the highest.

There are minds of that peculiar stamp, as can unite in themselves, at once, all the finer characteristics of the civilian, with the distinguishing attributes of the soldier, and the invincible spirit of Numantia's citizens. A retreating army will muster courage from despair, and perform the most daring exploits ; but minds of the stamp I allude to, are not alone remarkable for sudden grand dashes of conduct, or paroxysms of distinguished valour ; they possess a knowledge of the sciences and of literature in general, united to a calmness and a fortitude which, without in the least impairing their sensibility or ardour, is not to be subdued by the chances of war, or the caprices of fortune. If the Roman consul,* (armed as he was with a glowing magnificence of ideas, and nursed during the storms of the republic), was found equal to the government of a province, to the sole command of an army, and could produce those works which succeeding ages have cherished as the most precious re-

* Marcus Tullius Cicero.

mains of antiquity, and as reflecting a high lustre on the mental endowments of the race ; —if Xenophon was equally great in the closet and the field, and has reaped the highest honours of mankind on the splendid theatre of ancient Greece, by rising superior to every danger, during his memorable retreat from the heart of Asia to the confines of Europe, and by those inimitable works he has left behind him, pourtraying the finest picture of a philosophical mind ; —if Socrates could fight at Delium, reason with his judges, and philosophise with his pupil Alcibiades : —but we will not, longer, draw inspiration from the themes of antiquity, when the annals of modern times contain such names as need not blush at the achievements of former glory : for if Oxenstiern, the learned chancellor of Gustavus Adolphus, proved himself no less a consummate politician than a great warrior ; —if the immortal Haller* was able to take a distinguished part in the councils of his country, and Mead in the senate of this

* See Note C.

realm, the mind of the Physician, it must be evident, can extend itself so as to bring sciences, apparently remote, to a point of contact, and comprehend, within its grasp, a far higher sphere of operation, a far nobler field of action, than the insipid details of medical facts *alone* can possibly supply; if, therefore, the nature of man is capable of such high culture, as biography, so fertile in examples, clearly demonstrates; and finally, if the great object of all education, whether public or private, is found to concentrate * “*in procuring to the body the force that it ought to have, and to the soul that perfection of which it is susceptible,*” let it be our constant aim, throughout the short measure of the days allotted us, to attain that practical wisdom which fits men to perform with ability, the arduous duties of peace and of war. “I call that,” says Milton, “a complete and gene-

* “L’objet de l’education est de procurer au corps la force qu’il doit avoir: à l’ame la perfection dont elle est susceptible.”—Voyez le *Voyage du Jeune Anacharsis en Grèce*, and the writings of the Greek moralists.

rous education, which fits a man to perform justly, skilfully, and magnanimously, all the offices, both public and private, of peace and of war."

In all our conduct we proceed instinctively, upon the supposition of a uniformity in the laws of Nature, for the elements of the material world are the same *now* as when the majestic work of Creation *was done*. The same sun that ripened the fruits in the garden of Eden, still pours forth its beams to enlighten the orbs in the firmament. The great principles of morality are in all men essentially the same, whether they are found infesting the fertile streams of the Potomac, the cold shores of the Wolga, or the delightful meanders of the Thames and the Tweed ; although, from man being so much the creature of education and habit, from the various direction that is given to the unceasing activity of his faculties, and from the perpetual change which all human affairs seem doomed to undergo, his very *nature* appears also to be changed, and destined, by the demon of destruction, to oscillate for ever

between good and evil, truth and error, refinement and barbarity. So transient is the seat of dominion, and so changeable is the character of a people, that although the voice of Demosthenes thunders not within the walls of the seraglio ; and although Greece, once the cradle of the Sciences, is now laid waste by despotism, and the smoking hut of the wandering Arab is seen standing amidst Palmyra's ruins, still the buried seeds of Freedom, and that spirit with which Leonidas burned at Thermopylæ, may yet be revived in the breast of the Satrap. That wealth which now flows from the West to be swallowed up in the East, may hereafter be permitted to return. What is now only the wretched possession of a despotic empire, may contain, in the nearly extinguished embers of its former meridian glory, the rudiments of a phœnix destined in its turn to shed a lustre on the human species. In tracing the natural history of man through all its mazes, an interesting field must present itself to the mind of the philosopher ; it is no less than the effects of enthusiasm and the

religion of Mahomet having changed the fortunes of at least three-fourths of the race, and having caused the human mind to stagnate for the long period of fifteen hundred years, on that very soil where Wisdom once delighted to travel. Whether we contemplate mankind under the dominion of frenzy, or the institutions of slavery ; whether roving under a wild spirit of enterprise, or cast in the darkness of the middle ages ; whether we trace the revolutions of consuming, or of innovating Time, or whether we examine its effects on government, property, manners, and taste, the result of our labours will be still the same ; it will exhibit a dismal contrast of man's alternate career of improvement and degeneracy. We may wish to turn to happier climes, or make Imagination minister comforts to the heart, by telling the tale of those times, of that happy æra of the republic, when civilization had produced all its effects but that of corruption ; when a noble manliness of sentiment graced the living images of the age ; when, to violate the rights of hospitality, was held to be an act

of impiety ; and when, in the language of Livy, “ *nullum fastidiretur genus in quo eniteret virtus crevit Imperium Romanum* ;” we may do all this to prevent our pouring forth soliloquies of sorrow, still the alternate career of man’s improvement and degeneracy is a picture of so melancholy a cast, and tinged with such an infinity of hues, as would be no less difficult than painful to draw ; let us, therefore, stop where we are, and close the faint outline already sketched, by remarking, that the occupations of literature, and the study of the sciences, together with the glare and the bustle of active life, afford the flint and the steel, by whose collision the sparks of useful knowledge can best be elicited, and the blessings of peace, of humanity and justice, diffused o’er the variegated face of the earth.

However much the principle of exhaustion and decay has hitherto tended to operate, and entail centuries of misery and ruin upon nations once advancing in glory, in civilization, and in the practice of the arts ; still the sweet consolation remains to us of re-

flecting that the invention of gunpowder and that of printing, together with the science of modern fortification, and the knowledge of the laws of motion acquired by the modern engineer, will infallibly secure the race against the future incursions of barbarians, or against a long interval of ignorance and superstition. May, therefore, a harvest of felicity, and a degree of permanent security, hitherto unattained by any nations of the globe, await generations yet unborn!—The wish, though it may be delusive, affords comfort to those who indulge it.

Section Fourteenth.

WHEN an individual determines to study and to practice the profession of Medicine, his first duty is to ascertain its object, his second, the best manner of pursuing it. No difficulty can arise in discovering the former, as that must ever be the art of prolonging life and curing diseases: the most difficult task will be found to belong to the latter,

that is, how to ascertain the true nature of the disease itself, and then to arrive at its most proper indication of cure.—I have before had occasion to hint at that beautiful harmony pervading the majestic scale of creation ; to whatever science we may choose to direct our attention, still we cannot help perceiving the effects of such powers as never can be inherent in matter, or which no scheme of materialism could bring to pass ; and it is far from foreign to this subject to observe, that the corollary always deducible from the complex phenomena of the universe, is, that every event in nature results from general laws and not from *chance* : and, whenever we obtain a correct knowledge of these *laws*, we may next very safely proceed to reason concerning their *effects*. The reader will soon see the application of these remarks : That which I cannot insist upon as a fact, I will only take upon me to state in the form of a query ; might not therefore the method of induction, and the legitimate rules of philosophizing, or those rules which, since the days of Newton, have been appealed to as

the test of sound investigation, might not these, I say, be aptly and successfully applied to the science of medicine? I have elsewhere taken notice of what use a system of this kind would be to guide the conduct of the medical practitioner, and I am the more ardent in my expectations upon this head, from considering the very extensive field of dominion that man has acquired over nature in general, by pursuing steadily this method of proceeding. By the acquirement of a few general laws, we are frequently enabled to arrive at truths still more general; but as example is the best expounder, in illustration of this remark, I might say, that if Newton, if D'Alembert, if Black, and La Place, have discovered, in the course of their inquiries into physics, that one common principle, known by the name of gravitation, is found to operate upon every particle of matter; that bodies have a tendency to approach each other with a force varying with their mutual distance, according to a fixed established law; and that all the parts of this great globe itself are made obedient

to one code of general laws, which no agency of man can overturn, or which can only be altered by him who ordained them ;—I might say, that if they have, by confining their views to investigating the succession of physical events arising out of those general laws which the Deity has assigned for the government of the universe, heaped up such a body of useful science as modern times ought justly to be proud of :—and, lastly, I might say, that if in like manner modern metaphysicians, (as Dr Reid and Mr Stewart,) by limiting the field of their enquiry, by adhering strictly to the explanation of the phenomena observable in mind, without troubling themselves about the efficient causes by which these phenomena are produced, have found out, beyond the possibility of doubt, that *mind* itself is as much under the guidance of general laws as the planetary spheres moving in their elliptic orbits in the heavens ; if they have done all this, allow me to ask, what might not Physicians expect one day to accomplish, by pursuing a similar train of investigation in their inquiries, to that which has been

so successfully followed both in physical and in metaphysical researches?—Society abounds with men who treat every new attempt as the chimerical offspring of a wild and over-heated imagination, and who consider it as a libel upon the times in which *they* live not to see perfection in the existing order of things; whilst others are no less remarkable for an ungovernable rage for innovation, and who, not content with lopping off the defective parts, or in pruning the luxuriances, must in a moment pluck up the tree by the roots, as Nero, after exhibiting in his own person a spectacle the most degrading to humanity, wished even to cut out virtue itself in the person of Thrasea. The plan I have here suggested, appears to me to form that line which, if long and steadily pursued, will be progressive, and will rouse such a vigorous spirit of exertion as cannot fail in the end to spread with considerable force, in many other directions yet unknown; by following its course Dr Black perfected his two great discoveries of the causticity of lime and the laws of latent caloric; discoveries which have changed the

whole face of chemical science, and established on a sure basis the present system of pneumatic chemistry. But, however anxious we may be to extirpate those errors engrafted upon truth, yet in all sudden innovations danger is to be apprehended, as they bring but too often on society the very evils we are anxious to avert. “*Moderation*,” says Mr Hume, “*is the best line in politics*,” and it is no less so in medicine.

Section Fifteenth.

THE more deeply we examine into the existing state of medical science, the more we are convinced of the superstructure we possess being far too large for the small basis on which it has to settle: and it is a circumstance not unworthy of attention, that a great deal of what is called matter of fact in medicine is nothing else than theory; Physiologists as well as Physicians having been busily occupied in tracing the phenomena of the

body up to some general fact* which really is not known to have an existence. It is fit, therefore, that we unmask the delusion.

It has been often said, that the tottering fabric of medicine is easily overturned, and the truth of this remark we are reluctantly compelled to admit; for instead of taking enlarged and comprehensive views of the general histories of diseases; instead of viewing them as a whole, and marking leading facts, the attention of medical men has been too much confined to the consideration of a single symptom, or to vague hypothetical theories concerning causation. It may appear paradoxical to remark, that the science of medicine is at once fluctuating and stationary, but its records bear out the assertion; it is fluctuating from the frequent revolutions, that are befalling it, and it is stationary when its improvement is compared with that of the other sciences. Nor, indeed, can we expect that its progress will

* A spasm, the existence of a nervous fluid, &c. &c.

be accelerated until the principles upon which we ought to proceed are clearly and distinctly marked out ; until we are desirous of knowing what *really is*, rather than what the ancients *supposed to be* ;—until we cease to blend unsupportable theories, or metaphysical speculations, with the history of well-established facts ;—until we recollect that theories, when they do not comport with the apparent phenomena of disease, should never modify our practice, and should only, in that case, be considered useful, as affording a synopsis of many concurring facts, and as leading to the *anticipation* of a truth ;—until we cease to pry into the inexplicable *arcana* of Nature, and think it tarnishing the honour of science not to be able to account for every insulated fact occurring to our senses ;—until we cease to attribute that as a *cause* which is in fact often but an *effect* ;—until we cease to take partial views of the nature of our system, and begin to trace, step by step, the progress of diseases, from their incipient state to their final conclusion ;—until we cease to register opinions that deserve

no more a place in the pages of the science than those monuments of human folly which the Aristotelian school so reverently handed down to posterity ;—until we cease to annex those specific actions, those specific virtues to some medicines which a prescriptive right or title alone confers upon them ;—until we have a definite language for every term we employ, and until we cease to suppose that we give an explanation of diseases by only removing the difficulty a little further out of view ;—until the doctrines of humoral pathology cease to be considered as affording a solution of many queries ;—until we are able to satisfy ourselves with the knowledge of general facts, without perplexing our minds with sophisticated subtleties concerning the proximate causes of diseases, and of many of those simple laws by which the human body is known to be governed ;—until we are able to know what diseases differ in degree, what in kind, or what are generic and distinct ; what specific differences, and what modifications of one and the same disease ;—and, lastly, until medical knowledge ceases to be

resolvable into such arbitrary heads as is at present the case ;—until all these things are done, Medicine will never rest upon a stable foundation, nor will she be entitled to hold that rank or that dignity amongst the sciences to which she ought to lay claim. I know how easy it is to form arrangements in the closet, which it is impossible to realise on the public theatre of life, but that these things may be accomplished without that visionary, artificial arrangement which the cloistered philosopher is so addicted to form, I feel thoroughly persuaded. Much as the knowledge of incontrovertible facts is here insisted on, as the first basis of practical medicine, yet it will be remembered that it is not enough to accumulate facts ; we must likewise strive to generalise them in as chaste a manner as the imperfect state of medical science will at present admit of. And, although its infant state does not, from a retrospect of its annals, contribute much to sanction the hope of our being able to obtain just theories by the method of induction, yet this affords no

conclusive argument that we never shall be ; on the contrary, from considering the progress of natural philosophy, since Newton taught the followers of that beautiful science the road they ought to pursue ; from reminding the reader that it was but lately that the rules of philosophising were thought applicable to the science of mind ; and from tracing the several relations of medical science to studies of a more remote nature, there is, I think, enough already apparent to justify the most lukewarm admirer in cherishing the alluring belief, that, before the lapse of half a century, such a number of truths of detail, leading to general principles, and such a body of medical science will be heaped up, not less inferior in itself, or important in its consequences, than the most successful labours of physical and of metaphysical inquirers. Already, even in Dr Hamilton's work *, I think I can

* Observations on the Utility and Administration of Purgative Medicines in several Diseases.

perceive the germ of some promising fruit ; indeed I cannot help remarking, that this work of Dr Hamilton's appears to me to be the first approximation towards that chaste method of treating diseases, which it has been my humble endeavour throughout these pages to describe. The consequences of this work upon medical philosophy it is impossible for us at present to determine ; we have only to hope that it will form what mineralogists term, a primitive nucleus for future inquiries into the sound principles of medical science.

Many there are who will question the existence of that scientific simplicity, and that gradual advancement of medicine, to which I have in the context so frequently alluded ; at any rate it is certainly of consequence that the ardour for exertion be not damped by the chilling blasts of apathy ; and it is far more becoming the dignity of medical men, that their thoughts should bear a reference to the future, than be modified by the blank of the past. Speculative men may form ardent expectations concerning the progressive im-

provement of the race, and the future happiness of men ; whether these ideas, so pleasing to those who cherish them, will be realized, the prophetic mind of the philosopher cannot determine ; but one thing appears certain, viz. that Nature has given to our species a power of abridging its labours beyond what could in a less enlightened age ever be expected. The wonderful manner in which minds accustomed to the extensive views of general science, have drawn some comprehensive theorems to which so many phenomena may be referred, is truly astonishing. I do not say that any such theorems can be introduced into medicine ; indeed my experience of their utility is *so extremely limited*, that I am not warranted in speaking with any degree of decision upon this point ; and I am the more anxious to wave their further consideration, lest it might be supposed that I had fallen into the error of those refined mathematicians, who, forgetting the extent of their art, sought to solve, by an algebraical *calculus*, those simple, yet sublime, conclusions of morality, on which

the mind meditates with ineffable delight ; all, therefore, that I would be understood to insinuate, or that I mean to deduce from the application of principles so general is, that when once the human mind has been properly directed to medical pursuits, and when in consequence therefrom a few leading principles have been obtained, then a number of those appearances resulting from the human body, which at present are considered as idiosyncracies, or as forming those anomalies which can be referred to no general heads, will gradually lose themselves in a few general laws, a few known habitudes of action. It is not, however, so much from the efforts of any single individual that I would rest my hopes of the improvement of the science, as from the conspiring labours of many men directed to the same focus, and guided by the same models of chaste investigation. That obstacles of no common nature will occur to the introduction of a just standard of medical analysis, must be obvious to all ; and, notwithstanding the circumstance of there being no established uniformity in the type

of diseases ;—that the same succession of symptoms does not invariably follow, when the same disease is ascertained to exist ;—and, notwithstanding the living body does not afford an object for such steady examination to the mind of the Physician, as inanimate matter does to the experimental chemist, or as organised materials do to the mechanical philosopher, still there is nothing in the investigation of those results, arising from the complicated structure of the human body, which can in the least justify our considering medicine as a study *sui generis*, which no definitions are able to comprise : and if this is established as a fact, it must follow as a consequence, that medicine is one of those sciences which can admit of determinate rules for its better prosecution. The gap is great, the interval is wide, and the progress of improvement is certainly immense, from the mind's proceeding from the observation of facts to the ultimate establishment of principles ; or, from the knowledge of principles to form the arrangements of science ; but without indulging in that fond

admiration for the learning of our own times so natural to all, I can scarcely help once more repeating, that every thing connected with the science sufficiently manifests that we are *now* in a much better train than we ever were before ; the wisdom of Gaubius, of Boerhaave, and of Sydenham, is fast retiring before the chaster knowledge of the present age ; and that which we ourselves may be inclined to boast of, will be eclipsed by the labours of the next. Such is the beautiful provision made for the indefinite improvement of the race ; such the manner in which the pride of the *individual* is humbled, by the provident bounty of Heaven, causing every rolling year to contribute but the more to enlarge the circle of knowledge, and to enlighten the character of the *species*. — Having brought matters to this crisis, let us now take leave of the reader, by remarking, that no one will pretend to deny, that there are many laws of the human system, established beyond the possibility of doubt, and the just application of the effects of these laws to practical medicine is, I will

venture to prognosticate, destined hereafter to become one of the most interesting and important branches of the medical philosopher. Many clouds, it is true, still overshadow the science of medicine, which, when a just method of studying it has been ascertained, will perhaps be dispersed: The study of chemistry, and the discovery of the absorbent system, have afforded us a clearer horizon, and we have yet to hope for one more serene.

Finis.

NOTES.

Note A. Page 2.

THE reasoning in this section must be understood with some few limitations. The truth is, that many events which are brought about by an unforeseen coincidence of circumstances, and by the general course of human affairs, are too frequently attributed to legislative sagacity and to political wisdom. Nor is this all ; for that secrecy which, in all the governments of modern Europe, is so much the theme of admiration, serves, in a very effectual manner, to throw a veil over the misconduct of the Statesman. It is thus, by a suppression of material facts, and important points of evidence, necessary for the full elucidation of any controverted subject, that those to whom the direction of government is entrusted, are so often enabled to justify their errors, and give an appearance of plausibility to the mistakes into which they may have happened to fall.

Note B. Page 22.

To those who may be slow in admitting the principles by which the foregoing observations have been suggested,

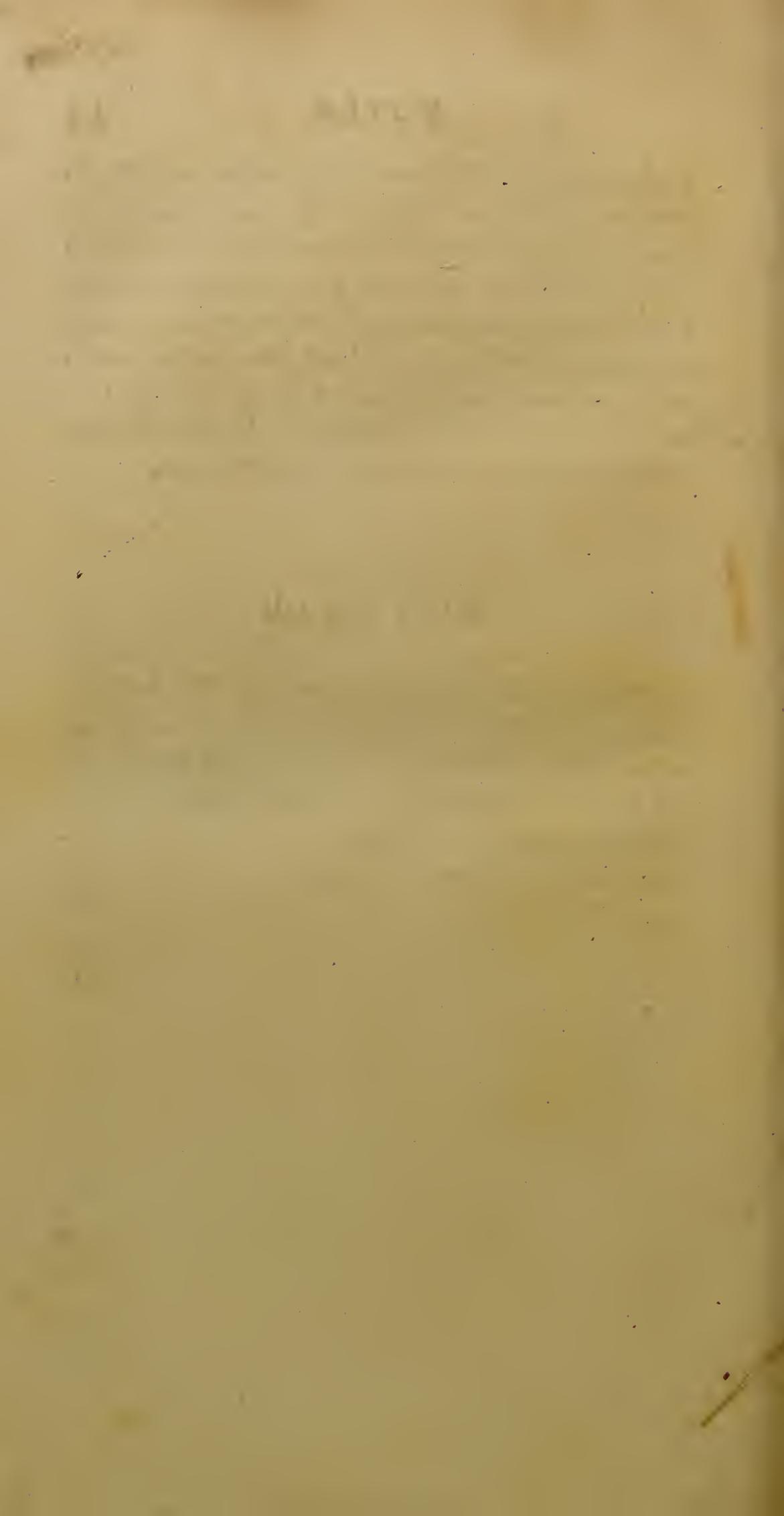
allow me to quote the following remarks "*on the aid which memory derives from philosophical arrangement,*" from the work of Mr Stewart:—

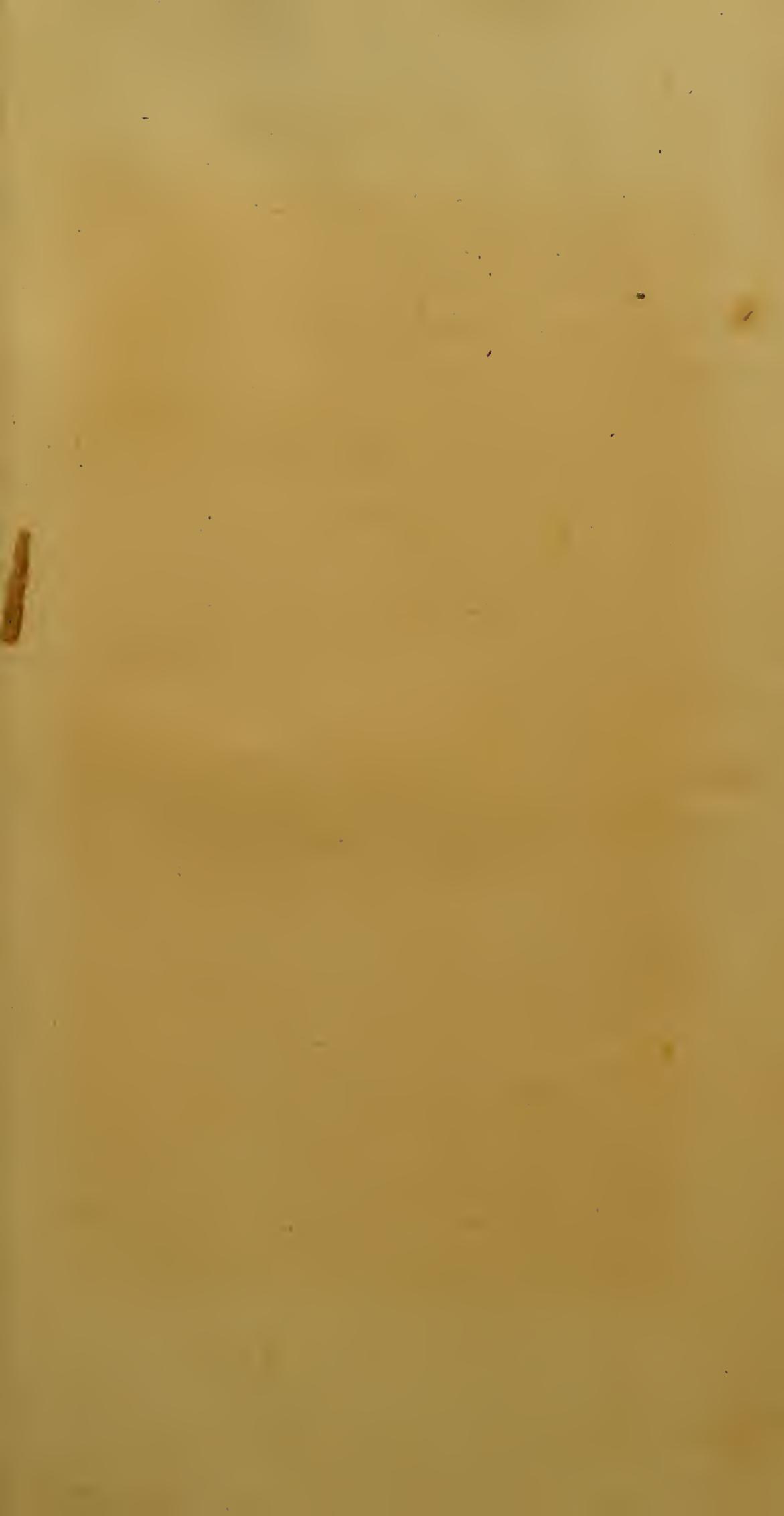
“ There are some sciences, in which hypothetical theories are more useful than in others ; those sciences, to wit, in which we have occasion for an extensive knowledge and a ready recollection of facts, and which, at the same time, are yet in too imperfect a state to allow us to obtain just theories by the method of induction. This is particularly the case in the science of medicine, in which we are under a necessity to apply our knowledge, such as it is, to practice. It is also, in some degree, the case in agriculture. In the merely speculative parts of physics and chemistry, we may go on patiently accumulating facts, without forming any one conclusion, farther than our facts authorise us ; and leave to posterity the credit of establishing the theory to which our labours are subservient. But in medicine, in which it is of consequence to have our knowledge at command, it seems reasonable to think, that hypothetical theories may be used with advantage ; provided always, that they are considered merely in the light of artificial memories, and that the student is prepared to lay them aside, or to correct them, in proportion as his knowledge of nature becomes more extensive. I am, indeed, ready to confess, that this is a caution which it is more easy to give than to follow : for it is painful to change any of our habits of arrangement, and to relinquish those systems in which we have been educated, and which have long flattered us with an idea of our own wisdom. Dr Gregory mentions it (in

his Lectures on the Duties and Qualifications of a Physician,) as a striking and distinguishing circumstance in the character of Sydenham, that, although full of hypothetical reasoning, it did not render him the less attentive to observation ; and that his hypotheses seem to have sat so loosely about him, that either they did not influence his practice at all, or he could easily abandon them, whenever they would not bend to his experience.”—Vide *Elements of the Philosophy of the Human Mind*, p. 445. 8vo edit.

Note C. Page 111.

“ Albrecht Von Haller was born 1708. He studied at Leyden, under the direction of the great Boerhaave, became Professor of Anatomy and Botany at Goettingen, left that celebrated academy, and went to Bern, where he became President of the great Senate, and died 1777.”—Vide *Willdenow's Botany*, page 448.





Jan 11/83

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